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A LATE DISCOURSE

Made in a Solemne Assembly of Nobles and Learned Men at *Montpellier* in *France*,

By Sr. *Kenelme Digby*, Knight, &c.

Touching the Cure of Wounds by the *Powder of Sympathy*; With Instructions how to make the said Powder; whereby many other Secrets of Nature are unfolded.

Fœlix qui potuit Rerum *cognoscere* causas.

Rendered faithfully out of French into English

By *R. White*, *Gent.*

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The second Edition corrected and augmented, with the addition of an Index.

LONDON, Printed for *R. Lowndes* at the *White Lion*, and *T. Davies* at the *Bible* in S. *Pauls* Churchyard, over against the little North Door, 1658.

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TO THE

Most Noble, and Heroick Gentleman, JOHN DIGBYE Esq. at *Gothhurst*.

SIR,

BEing making this Dedicatory Addresse unto you, I may truly say tis done to the Renowned Author Himself; for besides the ordinary relation of Father and Son betwixt you, there was never, I dare boldly say,

such a perfect exact similitude twixt any two since the World began. For you resemble him, not onely in the outward Symmetry, in that goodly proportion, and comportments of your body. You are like him, not onely in Physiognomy of face, having the same spacious front, the same perspicacious eyes, with other visible parts so marvellously alike, but the tone of your voice, the accent of your words, your very breath, and articulate sounds are the same with his; insomuch, that it being well observed, this admirable similitude, or rather Identity, may be called one of the greatest wonders of these times.

Now, Sir, this Resemblance being so exact, through all the outward parts Capapee; *It may be well presumed, that you are also like him in the Idea's of your soul, and in the interiour motions of your*

mind,

mind, and consequently in his sublime speculations. Therefore I hope that neither the World will accuse me of Impertinence, *or your self of* presumption, *that I make this Dedication, and thereby style my self,*

Highly Honoured Sir,

Your most humble and
ready servant

R. WHITE.

An Extract of the Royall priviledge in France for printing the said Discourse.

BY the Grace, and priviledge of the King, given in Paris the one and twentieth of December one thousand six hundred fifty seven, It is permitted to *John Ancelin* to cause to be printed, sold, and uttered by what Bookseller he shall think fit, a Book intitled, *A discourse made in a famous* Assembly by *Cavalier Digby, touching* the cure of wounds by the Powder of *Sympathy*, &c. And this during the time, and space of ten yeares,

with prohibition to all Booksellers and Printers to counterfeit, sell or utter the said Book without the consent and permission of the said *Ancelin*, or of those who shall derive a right from him, under the penalty of one thousand five hundred *Livers*, and of all expences, domages, and interests, as it is more amply contained within the Letters of the said Priviledge.

The said *Ancelin* hath transmitted the right of the said Priviledge to *Augustine Courbe* and *Peter Moet*, Merchants of Books in *Paris*, according to the Agreement betwixt them.

His Majesties Library is furnished with two Coppies accordingly.

AN

An Information to the Knowing Reader.

THis *Exquiſite Philoſophicall Diſcourſe was made lately by that Renowned Knight Sir* Kenelme Digby, *in one of the moſt famous Academies of* France. *It contains a variety of many rec ndite and high myſteries of Nature, which are all here unmasked. And as all that great* Scientifical Aſſembly, *compoſed of the choiceſt wits under that Clime, ſtood then aſtoniſhed at the profound ſpeculations of the Author,*

(which were delivered by way of Oration, and taken in short writing upon the place as 'twas uttered) so I believe it will work the same effect in any Judicious Soul, when he hath seriously perused it.

R. WHITE.

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A DISCOURSE

TOUCHING The Cure of *Wounds*, By the Powder of *Sympathie*.

My Lords,

I Believe you will remain all in one mind with me, that to penetrate, and know a Subject, it is necessary in the first place, to shew whether the thing be such as it is supposed or imagined to be: For would not one unprofitably lose both his time and labour, to busie himselfe in looking after the causes of that which peradventure is but a Chimera, without any foundation of truth?

I remember to have read in a place in *Plutarch*, where he propoſeth this queſtion, Wherefore thoſe Horſes, who, while they were Colts, have been purſued by the Wolf, and ſaved themſelves by force of running, are more fleet then other Horſes? Whereunto he anſwers, That it may be that the ſcaring and affrightment which the Wolf gives unto the young beaſt, makes him try his utmoſt ſtrength to deliver himſelf from the danger that follows him at the heels, therefore the ſaid fright doth as it were unknit his joynts, and ſtretch his ſinews, and makes the Ligaments, and other parts of his body, the more ſupple to runne; inſomuch, that he reſents it all his life afterwards, and becomes a good Courſer: Or it may be, ſayes he, that thoſe Colts which are naturally ſwift, ſave themſelves by running away; whereas others, who are not ſo, are overtaken by the Wolf, and ſo become his prey: and ſo it is not becauſe they have eſcaped the Wolf, that they are the more fleet, but it is

their

their naturall ſwiftneſſe which ſaves them. He affords alſo other reaſons, and at laſt concludes, that it may be the thing is not true. I find it not ſo fit (my Lords) to reply hereunto at a Table-diſcourſe, where the chief deſign of converſation is to paſſe away the time gently and pleaſantly, without medling with the ſeverity of high fetcht reaſons, to wind up the ſpirits, and make them more attentive. But in ſo renowned an Aſſembly as this, where there are ſuch judicious Perſons, and ſo profoundly learned, and who upon this meeting expect from me that I pay them in ſolid reaſons; I ſhould be very ſory, that having done my uttermoſt to make it clear, how the Powder, which they commonly call the Powder of Sympathy, doth naturally, and without any Magick, cure wounds without touching them, yea, without ſeeing of the Patient; I ſay, I ſhould be very ſorry that it ſhould be doubted, Whether ſuch a cure may effectually be performed or no.

In

In matter of fact, the determination of existence, and truth of a thing, depends upon the report which our senses make us. This businesse is of that nature; for they who have seen the effects, and had experience thereof, and have been carefull to examine all necessary circumstances, and satisfied themselves afterwards, that there is no imposture in the thing, do nothing doubt but that it is reall, and true. But they who have not seen such experiences, ought to referre themselves to the Narrations, and authority of such, who have seen such things; I could produce divers, whereof I was an ocular witnesse, nay, *Quorum pars magna fui*: But as a certain, and an accounted example in the affirmative, is convincing to determine the possibility, and truth of a matter which is doubtfull; I shall content my self, because I would not trespasse too much upon your patience at this time, to make instance in one onely; but it shall be one of the cleareſt, the most perspicuous, and the most aver-

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red that can be, not onely for the remarkable circumſtances thereof, but alſo for the hands, which were above the *Vulgar*, through which the whole buſineſſe paſſed. For the cure of a very ſore hurt was perfected by this Power of Sympathy, upon *a perſon* that is illuſtrious, as well for his many perfections, as for his ſeverall imployments. All the circumſtances were examined, and ſounded to the bottom, by one of the greateſt, and moſt knowing Kings of his time, *viz.* King *James*, of *England*, who had a particular talent, and marvellous ſagacity, to diſcuſſe naturall things, and penetrate them to the very marrow; as alſo by his Sonne, the late King *Charles*, and the Duke of *Buckingham*, their prime Miniſter. And in fine, all was regiſtred among the obſervations of great *Chancelor Bacon*, to adde by way of Appendix, unto his Naturall Hiſtory. And I believe, Sirs, when you ſhall have underſtood this Hiſtory, you will not accuſe me of vanity, if I attribute unto

my

my self the introducing into this Quarter of the World this way of curing.

Mr. *James Howel*, (well known in *France*, for his publick works, and particularly for his *Dendrologia*, translated into French by *Monsieur Baudoin*) coming by chance as two of his best friends were fighting in Duel, he did his endeavour to part them, and putting himself between them, seized with his left hand upon the hilt of the sword of one of the Combatants, while with his right hand he laid hold of the blade of the other: they being transported with fury one against the other, strugled to rid themselves of the hindrance their friend made that they should not kill one another; and one of them roughly drawing the blade of his sword, cuts to the very bone the nerves and muscles of Mr. *Howel's* hand; and then the other disingaging his hilts, gave a crosse blow on his adversaries head, which glanced towards his friend, who heaving up his sore hand to save the blow, he

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was wounded on the back of his hand, as he had been before within. It seems some strange Constellation reigned then against him, that he should lose so much blood by parting two such dear friends, who had they been themselves, would have hazarded both their lives to have preserved his: but this unvoluntary effusion of blood by them, prevented that which they should have drawn one from the other: For they seeing Mr. *Howels* face besmeared with blood, by heaving up his wounded hand, they both ran to embrace him; and having searched his hurts, they bound up his hand with one of his garters, to close the veines which were cut, and bled abundantly. They brought him home, and sent for a Surgeon. But this being heard at Court, the King sent one of his own Surgeons, for his Majesty much affected the said Mr. *Howel*.

It was my chance to be lodged hard by him; and four or five dayes after, as I was making my self ready, he came to my House, and prayed me

me to view his wounds, for I understand, said he, that you have extraordinary remedies upon such occasions, and my Surgeons apprehend some fear, that it may grow to a Gangrene, and so the hand must be cut off. In effect, his countenance discovered that he was in much pain, which he said was unsupportable, in regard of the extreame inflammation: I told him that I would willingly serve him, but if haply he knew the manner how I would cure him, without touching or seeing him, it may be he would not expose himself to my manner of curing, because he would think it peradventure either ineffectuall, or superstitious: he replyed, That the wonderfull things which many have related unto me, of your way of curing, makes me nothing doubt at all of its efficacy; and all that I have to say unto you, is comprehended in the *Spanish* Proverb, *Hagase el milagro, y hagalo Mahoma*, Let the miracle be done though *Mahomet* do it.

I asked him then for any thing that had the blood upon it, ſo he preſently ſent for his Garter, where-with his hand was firſt bound: and having called for a Baſon of water, as if I would waſh my hands; I took a handfull of Powder of Vitrol, which I had in my ſtudy, and preſently diſſolved it. As ſoon as the bloody garter was brought me, I put it within the Baſon, obſerving in the interim what Mr. *Howel* did, who ſtood talking with a Gentleman in a corner of my Chamber, not regarding at all what I was doing: but he ſtarted ſuddenly, as if he had found ſome ſtrange alteration in himſelf; I asked him what he ailed? I know not what ailes me, but I find that I feel no more pain, methinks that a pleaſing kind of freſhneſſe, as it were a wet cold Napkin did ſpread over my hand, which hath taken away the inflamation that tormented me before; I replyed, ſince that you feel already ſo good an effect of my medicament, I adviſe you to caſt away all your playſters,

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onely keep the wound clean, and in a moderate temper twixt heat and cold. This was presently reported to the Duke of *Buckingham*, and a little after to the King, who were both very curious to know the circumstance of the businesse, which was, that after dinner I took the garter out of the water, and put it to dry before a great fire; it was scarce dry, but Mr. *Howels* servant came running, that his Master felt as much burning as ever he had done, if not more, for the heat was such, as if his hand were betwixt coales of fire: I answered, that although that had happened at present, yet he should find ease in a short time; for I knew the reason of this new accident, and I would provide accordingly, for his Master should be free from that inflammation, it may be, before he could possibly return unto him: but in case he found no ease, I wished him to come presently back again, if not, he might forbeare comming. Thereupon he went, and at the instant I did put again the garter into

the water; thereupon he found his Maſter without any pain at all. To be brief, there was no ſenſe of pain afterward; but within five or ſix dayes the wounds were cicatrized, and entirely healed. King *James* required a punctuall information of what had paſſed touching this cure: and after it was done and perfected, his Majeſty would needs know of me how it was done, having drolled with me firſt (which he could do with a very good grace) about a Magician and a Sorcerer; I anſwered, That I ſhould be alwayes ready to perform what his Majeſty ſhould command; but I moſt humbly deſired, before I ſhould paſſe further, to tell him what the Author, of whom I had the Secret, ſaid to the great Duke of *Tuſcany*, upon the like occaſion. It was a religious *Carmelite*, that came from the *Indies* and *Perſia* to *Florence*, he had alſo been at *China*, who having done many marvellous cures with his powder, after his arrivall to *Tuſcany*, the Duke ſaid he would be very glad to learn it of him: It was the father of

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the Great Duke who governs now. The *Carmelite* answered him, That it was a secret which he had learnt in the oriental parts, and he thought there was not any who knew it in *Europe* but himself, and that it deserved not to be divulged, which could not be done, if his Highness would meddle with the practise of it, because he was not likely to do it with his own hands, but must trust a Surgeon, or some other servant, so that in a short time divers others would come to know it as well as himself. But a few moneths after I had opportunity to do an important courtesie to the said Fryer, which induced him to discover unto me his secret, and the same year he returned to *Persia*; insomuch, that now there is no other knows this secret in Europe but myself: The King replied, That he needed not apprehend any fear that he would discover, for he would not trust any body in the World to make experience of his secret, but he would do it with his own hands, therefore he would have some of the Powder; which I delivered, instructing

ſtructing him in all the circumſtances. Whereupon his Majeſty made ſundry proofs, whence he received ſingular ſatisfaction.

In the interim, Doctor *Mayerne*, his firſt Phyſitian watched to diſcover what was done by this ſecret, and at laſt he came to know that the King made uſe of Vitriol. Afterwards he accoſted me, ſaying, he durſt not demand of me my ſecret, becauſe I made ſome difficulty to diſcover it to the King himſelf. But having learnt with what matter it was to be done, he hoped that I would communicate unto him all the circumſtances how it is to be uſed; I anſwered him, That if he had asked me before, I would have frankly told him all, for in his hands there was no feare that ſuch a ſecret ſhould be proſtituted, and ſo I told him all. A little after the Doctor went to *France*, to ſee ſome fair Territories that he had purchaſed near *Geneva*, which was the Barony of *Aubonne*. In this voyage he went to ſee the Duke of *Mayerne*, who had been a long time

his

his friend and protector, and he taught him this secret, whereof the Duke made many experiments, which if any other but a Prince had done, it may be they had passed for effects of Magick and Enchantments.

After the Dukes death, who was killed at the siege of *Montauban*, his Surgeon who waited upon him in doing cures, sold this secret to divers Persons of Quality, who gave him considerable summes for it, so that he became very rich thereby. The thing being fallen thus into many hands, remained not long in terms of a Secret, but by degrees it came to be so divulged, that now there is scarce any Country-Barber but knows it.

Behold now, Sirs, the Genealogie of the Powder of Sympathy in this part of the World, with a notable History of a cure performed by it. It is time now to come to the discussion, which is, to know how it is made. It must be avowed that it is a marvellous thing, that the hurt of a

wounded

wounded person should be cured by the application of a remedy put to a rag of cloth, or a weapon, at a great distance. And it is not to be doubted, if after a long and profound speculation of all the œconomy and concatenation of naturall causes, which may be adjudged capable to produce such effects, one may fall at last upon the true causes, which must have subtill resorts and means to act. Hitherto they have been wrapped up in darkness, and adjudged so inaccessible, that they who have undertaken to speak or write of them, (at least those whom I saw) have been contented to speak of some ingenious gentileness, without diving into the bottom, endeavouring rather to shew the vivacity of their spirit, and the force of their eloquence, than to satisfie their Readers and Auditors how the thing is really to be done. They would have us take for ready mony some terms which we understand not, nor know what they signifie. They would pay us with conveniences, with resemblances, with

Sympathies, with Magnetical virtues, and such terms, without explicating what these terms mean. They think they have done enough, if they feebly perswade any body that the businesse may be performed by a naturall way, without having any recourse to the intervention of Dœmons and spirits: but they pretend not in any sort to have found out the convincing reasons, to demonstrate how the thing is done.

Sirs, if I did not hope to gain otherwise upon your spirits; I say, that if I did not believe, that I should be able to perswade you otherwise than by words, I would not have undertaken this enterpise: I know too well

——*Quid valeant humeri, quid ferre recusent*:

such a design requires a great fire, and vivacity of conceptions, volubility of tongue, aptnesse of expressions to insinuate as it were by surprisall, that which one cannot carry away by a firme foot, and by cold reasons, though solid. A Discourse of this nature ought not to attend a stranger,

ger, who finds himſelf obliged to diſplay his ſenſe in a language wherein he can hardly expreſſe his ordinary conceptions. Nevertheleſſe, theſe conſiderations ſhall not deterre me from engaging my ſelf in an enterpriſe, which may ſeem to ſome much more difficult than that which I am now to performe, *viz.* to make good convincing proofs, that this Sympatheticall cure may be done naturally, and to ſhew before your eyes, and make you touch with your finger how it may be done. You know that *perſwaſions* are made by ingenious *arguments*, which being expreſſed with a good grace, do rather tickle the imagination, than ſatisfie the underſtanding: But *Demonſtrations* are built upon certain and approved principles, and though they be but roughly pronounced, yet they convince and draw after them neceſſary concluſions. They proceed as a ſtrong Engine faſtned to a gate to batter it down, or as a plate of metall to imprint the mark of the money, at every turn that

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truth makes, she approches but little, and as it were insensibly, and makes not much noise, and there is no such great force required to turn her; but her strength, though it be slow, is so invincible, that at the end, she breaks down the gate, and makes a deep impression on the piece of gold or silver: whereas the strokes of hammers, or bars, (whereunto may be compared the witty discourses, and flourished conceptions of ingenious wits) require the armes of a Giant, makes a great noise, and at the end produces but little effect.

To enter then into the matter; I will, according to the method of Geometricall Demonstrations, lay six or seven Principles, as foundation-stones, whereon I will erect my structure. But I will lay them so well, and so firmly, that there will be no great difficulty to grant them. These Principles shall be like the wheels of *Archimedes*, by the advantage whereof a child might be capable to hale ashore the biggest *Carack* of King *Hieron*, which a hundred pair of

of Oxen, with all the Ropes and Cables of his *Arſenal*, were not able to ſtir: ſo by the ſtrength of theſe Principles I hope to waft my concluſions to a ſafe Port.

The firſt Principle ſhall be, That the whole Orb or Sphere of the Aire is filled with light. If it were needfull to prove in this point, that the Light is a materiall and corporall ſubſtance, and not an imaginary and incomprehenſible quality, as many Schoolmen averre, I could do it evidently enough; but I have done this in another Treatiſe, which hath been publiſhed not long ſince. And it is no new opinion; for many of the moſt eſteemed Philoſophers among the Ancients have advanced it; yea, the Great Saint *Auguſtin* in his Third Epiſtle to *Voluſian*, doth alledge, that it is his opinion But touching our preſent buſineſſe, whether the light be the one or the other, it matters not, 'tis enough to explicate her courſe, and the journies ſhe makes, whereunto our ſenſes bear witneſſe. 'Tis clear, that iſſu-

ing continually out of her ſource, which is the Sun, and lancing her ſelfe by a marvellous celerity on all ſides by ſtreight lines, there where ſhe meets any obſtacles in her way, by the oppoſition of ſome hard, or opaque body, ſhe reflects, and leaping thence to equall angles, ſhe takes again her courſe by a ſtreight line, untill ſhe bandies ſome other ſide upon another ſolid body, and ſo ſhe continueth to make new boundings here and there; untill at the end, being chaſed on all ſides by the bodies which oppoſe her in her paſſage, ſhe is tyred, and ſo extinguiſheth. In the like manner we ſee a Ball in a Tenis-Court, being ſtruck by a ſtrong arme againſt the walls, leaps to the oppoſite ſide, that ſometimes ſhe makes the circuit of the whole Court, and finiſheth her motion near the place where ſhe was firſt ſtruck. Our very eyes are witneſſes of this progreſſe of the light, when by way of reflexion ſhe illuminates ſome obſcure place, whither ſhe cannot directly arrive; Or when iſſuing immediatly

mediatly from the Sun, and beating upon the Moon, or ſome other of the Planets, the rayes which cannot find entrance there, bound upon our earth, otherwiſe we ſhould not ſee them; and there ſhe is reflected, broken and bruiſed by ſo many bodies, as ſhe meets in her diverſity of reflexions.

The ſecond Principle ſhall be, that the light glancing ſo upon ſome body, the rayes which enter no further, and which rebound upon the ſuperficies of the body, looſen themſelves, and carry with them ſome ſmall particles or atomes; juſt as the ball, whereof we have ſpoken, would carry with it ſome of the moiſture of the wall, againſt which ſhe is banded, if the plaſter thereof were alſo moiſt, and as in effect, ſhe carryed away ſome tincture of the black, wherewith the walls are coloured. The reaſon whereof is, that the light, that ſubtill, and rarified fire, coming with ſuch an imperceptible haſt, for her darts are within our eyes, as ſoon as her head is a above

our Horizon, making ſo many million of miles in an inimaginable ſpace of time, I ſay, the *light beating* upon the body which oppoſeth her, cannot chuſe but make there ſome ſmall inciſions proportionable to her rarity and ſubtility. And theſe ſmall Atomes being cut, and looſened from their trunk, being compoſed of the four Elements, (as all bodies are) the heat of the light doth ſtick, and incorporate it ſelf with the moſt humid, viſcous, and gluing parts of the ſaid Atomes, and brings them along with her. Experience ſhews us this as well as Reaſon; for when one puts a wet cloth to dry before the fire, the fiery rayes beating thereon, thoſe which find no entrance, reflect thence, and carry away with them ſome ſmall moiſt bodies, which make a kind of miſt betwixt the cloth and the fire. In like manner the beams of the Sun at his riſing enlightning the earth, which is humified either by rain, or the dew of the night, raiſe a miſt, which by little and little aſcends to

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the tops of the hills; and this miſt doth rarifie according as the Sun hath more force to draw it upwards, untill at laſt we loſe the ſight thereof, and that it becomes part of the aire, which in regard of its tenuity is inviſible unto us. Theſe Atomes then are like Cavaliers mounted on winged courſers, who go very far, untill that the Sun ſetting, takes from them their Pegaſus, and leaves them unmounted; and then they precipitate themſelves in crowds to the earth, whence they ſprung, the greateſt part of them, and the moſt heavy fall upon the firſt retreating of the Sun, and that we call the *Serain*, which though it be ſo thin that we cannot ſee it, yet we feel it as ſo many ſmall hammers which ſtrike upon our heads and bodies, principally on thoſe that are ancient; for the young men, in regard of the boyling of their blood, and the heat of their complexion, thruſt out of them abundance of ſpirits, which being ſtronger than thoſe that fall from the *Serain*, reuſe them,

and hinder them to operate upon the bodies whence these spirits came forth, as they do upon those that being grown cold by age, are not warwranted by so strong an emanation of the spirits which come out of them. The wind which blows, and is tossed to and fro, is no other than a great River of the like Atomes, drawn out of some solid bodies, which are upon the earth, and so are banded here and there, according as they find cause for that effect.

I remember to have once sensibly seen how the wind is ingendred: I passed over Mount *Cenis*, to go for *Italy*, towards the beginning of Summer, and I was advanced to half the hill, as the Sun did rise cleer and luminous, but before I could see his body, because the Mountains interposed, I observed his rayes, which did guild the top of the Mountain *Viso*, which is the Pyramid of a Rock, a good deal higher than Mount *Cenis*, and all the neighbouring Mountains. Many are of opinion, that it is the highest Mountain in the

World,

World, after the *Pic of Teneriff*, in the grand Canary; and this Mount *Viſo* is alwaies covered with ſnow; I obſerved then, that about that place, which was illuminated by the Solar rayes, there was a fog which at firſt was of no greater extent then an ordinary bowle, but by degrees it grew greater, that at laſt, not onely the top of that Mountain, but all the neighbouring hills, were canopied all over with a cloud. I was now come to the top of Mount *Cenis*, and finding my ſelf in the ſtreight line which paſſeth from the Sun to Mount *Viſo*, I ſtayed awhile to behold it, while my people were coming up the hill behind, for having more men to carry my chair than they had, I was there ſooner. It was not long that I might perceive the ſaid fog deſcend gently to the place where I was, and I began to feel a freſhneſſe that came over my face, when I turned it that way. When all my Troop was come about me, we went deſcending the other ſide of Mount *Cenis*, towards *Suze*, and the

lower

lower we went, we ſenſibly found that the wind began to blow hard behind our backs, for our way obliged us to go toward that ſide where the Sun was. We met with Paſſengers that were going up that way we went down; they told us that the wind was very impetuous below, and did much incommodate them by blowing in their faces and eyes, but the higher they came, it was leſſer and leſſer: and touching our ſelves, when we came to the place where they ſaid the wind blew ſo hard, we found a kind of ſtorm, and it increaſed ſtill the lower we went, untill the Sun being well advanced, drew no more by that line, but cauſed a wind in ſome other place. The people of that Country aſſured me, that it was there alwaies ſo, if ſome extraordinary and violent accident did not intervene, and divert its ordinary courſe, which is, that upon a certain hour of the day, the wind doth raiſe it ſelf to ſuch a rumb, or point, and when the Sun is come to another point, another wind riſeth, and

ſo

ſo from hand to hand it changes the point till the Sun ſet, which alwaies brings with it a calm, if the weather be fair, and that alwaies comes from the Mount *Viſo*, oppoſite to the Sun. They told us alſo, that the daily wind is commonly ſtronger towards the bottom of the Mountain, than towards the top; whereof the reaſon is evident, for the naturall motion of every body naturall doth increaſe alwaies in ſwiftneſſe, according as it moves forward to its center, and that in an unequall number, (as *Galileo* hath ingeniouſly demonſtrated, I did it alſo in another Treatiſe) that is to ſay, that if at the firſt moment it advanceth an ell, in the ſecond it advanceth three, in the third five, in the fourth ſeven, and ſo it continueth to augment in the ſame manner; which proceeds from the denſity, and figure, of the deſcending body acting upon the ceſſibility of the medium. And theſe ſmal bodys which cauſe the wind from Mount *Viſo* are thick and terreſtrial; for the ſnow being compoſed of aquaticall and earthly parts united by the cold, when the heat

of

of the Solar beams doth disunite and separate them, the viscous parts flie with them, while the terrestriall, being too heavy to fly upward, fall presently downward. This makes me remember a very remarkable thing, which befell me when I was with my Fleet in the Port of *Scanderon*, or *Alexandrette*, towards the bottome of the *Mediterranean* Sea: there they use to disimbark, when they go to *Aleppo*, or *Babylon*. I had done already what I had intended to do in those seas, and happily compassed my design, so it imported me much to return to *England* as soon as possibly I could, and the rather because my Ships were battered by a great fight, which I had had a little before against a formidable power; which, although I had obtained the better, yet in so furious a dispute, my Fleet was in some disorder, and my Ships full of wounded men. To advise therefore of the most expedient road to come to some harbour, where I might repaire my Ships, and be in surety; I assembled

all

all my Captains, Pilots, and Mariners, the moſt experienced of my Fleet; and having propounded unto them my deſign, they were all of an unanimous opinion, that the ſuteſt courſe was towards the South; and to coaſt upon *Syria*, *Judea*, *Egypt*, and *Affrica*, and render our ſelves at the Streight of *Gibraltar*; and ſailing ſo near the body of the Earth, we ſhould have every night ſome ſmall briezes of wind, whereby we ſhould in a ſhort time make our Voyage. And beſides, we ſhould not be in any great danger to meet either with *Spaniſh* or *French* Fleets; for *England* was at that time in open warre with both thoſe Kings, and we had advice that they had great Fleets abroad, to vindicate ſome things we had done in prejudice of them both thoſe ſixteen months that we remained Maſter of thoſe Seas; therefore it concerned us to make towards ſome ſafe Port, where we might both refreſh our men, and repair our battered Veſſels.

My opinion was clean contrary

to

to theirs, for I believed our best way was to steer our course Westward, and to saile along the Coasts of *Cilicia*, *Pamphylia*, *Lydia*, *Natolia*, or *Asia* the lesse, and to traverse the mouth of the *Archipelago*, to leave the *Adriatick* Sea on the right hand, and passe by *Sicily*, *Italy*, *Sardinia*, *Corsica*, the Gulph of *Lion*, and so coast all *Spain*; telling them that it would be a great dishonour unto us to forsake our best road for fear of the enemy, being that our chief business thither was to find them out, and the protection which it had pleased God to afford us all along in so many combats in going, was cause to make us hope that the same Providence would vouchsafe to guide us as we should be returning. That there was no doubt but that the road which I proposed unto them, considered simply in it self, was, without comparison, the better, and the more expedite to saile out of the Mediterranean Sea, and gain the Ocean, because, said I, that although we have the briezes from off the

earth

earth as long as we were upon the coasts of *Syria* and *Egypt*, we shall not have them at all while we saile upon the coasts of *Lybia*, where there are those fearfull sands which they call the *Syrtes*, which are of a great extent, the said coast having no humidity, for there is neither tree nor herb grows there, there being nought else but moving sands, which covered and buried heretofore at one glut the puissant Army of King *Cambyses*. Now where there is no humidity, the Sun cannot attract to make a wind, so that we shall never find there, specially in Summer-time, any other wind but that Regular wind which blowes from East to West, according to the course of the Sun, who is the Father of winds, unlesse some extraordinary wind happen, either from the Coast of *Italy*, which lyes North-ward, or from the bottom of *Ethiopia*, where the mountains of the Moon are, and the source of the Cataracts of *Nyle*: therefore if we were neer the *Syrtes*, the winds of *Italy* would be most dangerous unto

us,

us, and expoſe us to ſhipwrack. I reaſoned ſo, according to naturall cauſes, while they of my Council of Warre kept themſelves firme to their experience; which was the cauſe that I would do nothing againſt the unanimous ſenſe of all; for although the diſpoſing, and reſolution of all things depended abſolutely upon my ſelf, yet I thought I might be juſtly accuſed of raſhneſs or wilfulneſs, if I ſhould preferre my own advice before that of all the reſt: ſo we took that courſe, and went happily as far as the Syrtes of *Lybia*; but there our Land-briezes failed us, and for ſeven and thirty dayes we had no other but a few gentle Zephirs, which came from the Weſt, whither we were ſteering our courſe. We were conſtrained to keep at anchor all that time, with a great deal of apprehenſion of fear, that the wind might come from the North, accompanied with a tempeſt; for if that had happened, we had been all loſt, becauſe our anchors had not been able to hold among thoſe moving ſands,

ſands, for under water they are of the ſame nature as they are upon dry land, and ſo we might be in danger to be ſhipwrackt upon that Coaſt. But God Almighty, who hath been pleaſed I ſhould have the honour to wait upon you this day, did deliver me from that danger. And at the end of ſeven and thirty dayes, we obſerved the courſe of the clouds very high, which came from South-eaſt, at firſt but ſlowly, but by degrees faſter and faſter, inſomuch, that in the compaſſe of two dayes, the wind which was forming it ſelf a great way off in *Æthiopia*, came in a tempeſt to the place where we rid at anchor, and led us to the place whither we intended to go; but the force of it was broken before, coming ſo long a diſtance.

Out of this diſcourſe we may infer, and conclude, that every where whereſoever there is any wind, there be alſo ſome ſmall bodies, or atoms, which are drawn from the bodies; which lye in the bodies, whence they come, by the virtue of the Sun,

and

and of the Light, and that in effect this wind is nothing else but the said atomes agitated, and thrust on by a kind of impetuosity; and so the winds do partake of the qualities of the place from whence they come; as for example, if they come from the South, they are hot; if from the North they are cold; if from the Earth alone they are dry; if from the Marine, or Sea-side, they are humid and moist; if from places which produce aromaticall substances, they are odoriferous, wholeson and pleasing; as they say those which come from *Arabia Felix*, which produceth Spices, Perfumes and Gummes of sweet savour; and this which comes from *Fontenay*, and *Vaugirard* to *Paris*, in the season of Roses, are all perfumed: on the contrary, those winds that come from stinking places, as from the sulphureous soil of *Pozzuolo*, do smell ill: and those that come from infected places, bring the contagion along with them.

My third principle shall be, that the Air is full throughout with small bodies or atomes, or rather that which

which we call our air, is no other than a mixture, or confusion of such atomes, wherein the aereall parts do predominate.

It is well known, that in nature there cannot be actually found any pure Element, without being blended with others; for the outward fire, and the light acting one way, and the internall fire of every body pushing on another way, causeth this marvellous mixture of all things in all things. In that huge extent, wherein we place the air, there is sufficient space, and liberty in which to make such a mixture, which Experience as well as Reason doth confirme. I have seen little Vipers, as soone as they came out of the eggs wherein they were ingendred, being not an inch long, having been kept in a large Gourd, covered with paper tyed round about, that they might not get out, and little holes made with pins, that the air might enter, increase in substance and bignesse so prodigiously in six, eight, or ten months

months, that it is incredible, and more ſenſibly, during the ſeaſon of the equinoxes, then, when the air is fuller of thoſe ethereall and balſamicall atomes which gave them their balſamick virtue, which they drew for their nouriture.

Hence it came that the *Coſmopolites* had reaſon to ſay, *Eſt in aere occultus vitæ cibus.* There is a hidden food of life in the air. Theſe ſmall Vipers had but the air onely for their ſuſtenance, nevertheleſſe by this thin viand, they came in leſſe than a year to a foot long, and proportionably big and heavy. Vitriol, Saltpeter, and ſome other ſubſtances, do augment in the ſame manner, onely by attraction of air.

I remember, that upon ſome occaſion, ſeventeen or eighteen yeares ago, I had occaſion to uſe a pound of Oyle of Tartar; it was at *Paris*, where I had then no Operatory. Then I deſired *Monſieur Ferrier*, a man univerſally known by all ſuch that are curious, to make me ſome, for he had none then ready made, but

but did it expreſſely for me, and for the Calcination of Tartar, twenty pound may be as eaſily made as two, without increaſe of charge, therefore he took occaſion hereby to make a quantity for his own uſe. When he brought it me, the oyle did ſmell ſo ſtrong of the Roſe, that I complained that he ſhould mingle it with that water, in regard I had deſired him to do it purely, by expoſing it to the humid air, for I verily thought that he had diſſolved the ſalt of Tartar in Roſe-water; he ſwore unto me that he had not mingled it with any liquor, but that he had left the Tartar calcined within his Cellar, to diſſolve of it ſelf. It was then in the ſeaſon of Roſes, therefore it ſeems that the air being then full of the atomes, which come from the Roſes; and being changed into water by the powerfull attraction of the ſalt of Tartar, their ſmell became very ſenſible in the place where they were gathered; as the beams of the Sun do burn, being crowded together in a Burning-glaſs.

There

There happened also another marvellous thing touching this oyle of Tartar, which may serve to prove a proposition which we have not yet touched: but not to interrupt the course of the story, I will tell it you by way of advance. It was, that as the season of Roses was passed, the smell of the Roses did vanish away from the said oyle of Tartar, so that in three or four months it was quite gone. But we were much surprised, when the next year the said odour of Roses returned as strong as ever it did, and so went away again towards winter, which course it still observes. Which made *Monsieur Ferrier* to keep it as a singular rarity, and the last Summer I found the effect of it in his house.

We have in *London* an unlucky and troublesome confirmation of this doctrine, for the air useth to be full of such atomes. The materiall whereof they make fire in that great City, is commonly of pit-coal, which is brought from *Newcastle*, or *Scotland*; this coal hath in it a great quantity

quantity of volatil ſalt very ſharp, which being carried on by the ſmoke doth diſſipate it ſelf, and fill the aire, wherewith it doth ſo incorporate, that although we do not ſee it, yet we find the effects, for it ſpoiles beds, Tapiſtries, and all other houſhold-ſtuff that is of any beautifull fair colour, for the fuliginous aire doth tarniſh it by degrees; and although one ſhould lock up his Chamber, and come not thither a good while, and keep it never ſo clean, yet at his returne he will find a black kind of thin ſoot cover all his houſhold-ſtuff; as we ſee in Mills, there is a white duſt, as alſo in Bakers ſhops, which uſeth to whiten the walls, and ſometimes gets into cupboards and cheſts. The ſaid coal-ſoot alſo gets abroad, and fouls cloths upon hedges, as they are a drying, as alſo in the Spring-time, the very leaves of trees are beſooted therewith. Now, in regard that it is this aire which the lungs draw for reſpiration among the inhabitants, therefore the fleg me and ſpittle which comes from them

is commonly blackish and fuliginous. Moreover, the acrimony of this soot produceth another funestous effect, for it makes the people subject to inflammations, and by degrees to ulcerations in the lungs. It is so corrosive, and biting, that if one put gammons of bacon, or beef, or any other flesh within the chimney, it so dries it up, that it spoiles it. Wherefore they who have weak lungs, quickly feel it, whence it comes to passe, that almost the one halfe of them who die in *London*, die of ptisicall, and pulmonicall distempers, spitting commonly blood from their ulcerated lungs. But at the beginning of this malady, the remedy is very easie; It is but to send them to a place where the aire is good: many do usually come to *Paris*, who have means to pay the charge of such a journey, and they commonly use to recover their healths in perfection. The same inconveniences are also, though the operations be not so strong in the City of *Liege*, where the common people

people burn no other than pit-coals, which they call *hoville*. *Paris* her ſelf alſo, although the circumambient aire be paſſing good, is yet ſubject to incommodities of that nature. The exceſſively ſtinking dirt and channels of that vaſt City, mingleth a great deal of ill allay with the purity of the aire, ſtuffing it every where with corrupted Atomes, which yet are not ſo pernicious as thoſe of *London*. We find that the moſt neat and poliſhed ſilver plate, expoſed to the aire, becomes in a ſhort time livid and foul; which proceeds from no other cauſe, then from thoſe black Atomes, (the true colour of putrefaction) which ſtick unto them. And the more poliſht and bright the metal is the more viſible are they all. I know a perſon of quality, (and a ſingular friend of mine) who is lodged in a place, where on the one ſide a great many poor people do inhabit, where few Carts uſe to paſſe, and fewer Coaches: his neighbours behind his houſe empty their filth and ordure in the middle of the

ſtreet, which uſeth hereby to be full of mounts of filth, which is uſed to be carried away by Tombrells; when they remove theſe ordures, you cannot imagin what a ſtench, and kind of infectious aire is ſmelt thereabout every where. The ſervants of my ſaid friend, when this happens, uſe to cover their plate, and andirons of poliſhed braſſe, and other of their faireſt houſhold-ſtuff, with cotten, or courſe bayes, otherwiſe they would be all tarniſhed; yet nothing hereof is ſeen within the aire: though theſe experiences do manifeſtly convince, that the aire is ſtuffed with ſuch atomes. I cannot omit to adde hereunto another experiment, which is, that we find by the effects, how the rayes of the Moon are cold and moiſt. It is without controverſie, that the luminous parts of thoſe rayes come from the Sun, the Moon having no light at all within her, as her eclipſes bear witneſſe, which happen when the earth is oppoſite 'twixt her & the Sun; which inter poſition ſuffers her not

to

to have light from his rayes. The beames then which come from the Moon, are those of the Sun, which glancing upon her, reflect upon us, and so bring with them the atomes of that cold and humid star, which participates of the source whence they come: therefore if one should expose a hollow bason, or glasse, to assemble them, one shall find, that whereas those of the Sun do burn by such a conjuncture, these clean contrary do refresh and moysten in a notable manner, leaving an aquatick, and viscous glutining kind of sweat upon the glasse. One would think it were a folly that one should offer to wash his hands in a well-polisned silver-bason, wherein there is not a drop of water, yet this may be done by the reflexion of the Moon-beams onely, which will afford a competent humidity to doe it; but they who have tryed this, have found their hands, after they are wiped, to be much moister than usually: but this is an infallible way to take away warts from the hands, if it be often used.

Let us then conclude out of theſe premiſes, and experiments, that the aire is ful of Atomes, which are drawn from bodies by meanes of the light which reflects thereon, or which ſally out by the interior naturall heat of thoſe bodies, which drive them forth. It may haply ſeem impoſſible that there can be an emanation of ſo many ſmall bodies, that ſhould be ſpread up and down the aire, and be ſo carried up and down, and ſo far by a continuall flux, (if I may ſay ſo) and yet the body whence they come receive no diminution that is perceptible, though ſometimes 'tis viſible enough, as by the evaporations of the ſpirits of wine, muſk, and other ſuch volatil ſubſtances. But this objection will be null, and the two precedent principles will render themſelves more credible, when we ſhall ſettle another, *viz.* That every body, be it never ſo little, is diviſible *ad infinitum*, not that it hath infinite parts, for the contrary thereof may be demonſtrated, but it is capable to

be

be divided and ſubdivided into new parts, without ever coming to the end of the diviſion. And it is in this ſenſe that our Maſters teach us that quantity is infinitely diviſible. This is evident to him who ſhall conſider with a profound imagination the eſſence, and the formall reaſon of quantity, which is nothing elſe but diviſibility. But in regard that this ſpeculation is very ſubtile and metaphyſicall, I will ſerve my ſelf with ſome geometricall demonſtrations to prove this truth, for they accommodate beſt with the imagination. *Euclide* doth teach us in the tenth Propoſition of his ſixth book, that if one take a ſhort line, and another long one, and that the long be divided to divers equall parts 'twixt themſelves, the little one may be divided alſo into as many equall parts among themſelvs, & every one of thoſe parts alſo into others, and theſe laſt into ſo many more, and ſo conſecutively, without being able ever to come to that which is not diviſible.

But lets ſuppoſe (although it be impoſſible) that one might divide, and ſubdivide a line, ſo that at laſt we ſhould come to an indiviſible, and lets ſee what will come of it: I ſay then, that ſince the line doth reſolve it ſelf into indiviſibles, ſhe ought to be compoſed of them; lets ſee whether that may be verified. To which purpoſe I take three indiviſibles, and to diſtinguiſh them, let them be A. B. C. for if three millions of indiviſibles make a long line. three indiviſibles will make a ſhort one. I put them then in a rank; Firſt, I put A, then B, ſo neer, that they touch one another: I ſay that B. muſt neceſſarily poſſeſſe the ſame place as A, or that it doth not poſſeſſe it; if it doth poſſeſſe the ſame place, they both together make no extenſion, and by the ſame reaſon neither 3 nor 3000 will doe it, but all the indiviſibles will unite together, and the reſult of all ſhall be but onely one indiviſible. It muſt be then that being not both in the ſame place, yet touching one another,

ther, one part of B must touch one part of A, and the other part toucheth it not. Then I adde the indivisible C, whereof one part shall touch a part of B which touches not A, and by this means B is copulant, lying between A and C, to make the extension. To do this, you see that we must admit that B hath parts as the other two, which by your supposition are all indivisible; which being absurd, the supposition is impossible. But to render the matter yet more perspicuous, lets suppose that these three indivisibles make one extension, and compose one line; the proposition already cited from *Euclide* demonstrates that this line may be divided into thirty equall parts, or into as many as you please: insomuch that it must be granted that every one of these three indivisibles may be divided into three parts, which is point-blank against the nature and definition of an indivisible. But without dividing into so many parts, *Euclide* shews by his tenth proposition of his first Element, that every line may be parted into two equall parts: but

this being compoſed of indiviſibles of unequall number, it muſt neceſſarily follow, that being parted into two, there muſt be an indiviſible more on the one ſide than on the other, or that that of the middle be parted into two halfs: inſomuch, that he who denies that quantity may not be divided *ad infinitum*, doth entangle himſelf in abſurdities, and incomprehenſible impoſſibilities. And on the contrary, he who aſſents unto it, will find it no impoſſibility, or inconvenient, that the Atomes of all bodies which are in the aire may be divided, ſtretcht and carryed to a marvellous diſtance. Our very ſenſes verifie it in ſome ſort: there is no body in the World which we know ſo compact, ſo ſolid, and weighty as gold, yet nevertheleſſe unto what a ſtrange extent and diviſion may it be brought? Lets take an ounce of this maſſy metall, it ſhall be but a button as big as my fingers end. A beater of gold will make a thouſand leaves or more of this ounce, one half of theſe leaves

ſhall

ſhall ſuffice to guild the whole ſurface of a lingot of ſilver, of three or four ounces : lets give this guilded lingot of ſilver to them, who prepare gold and ſilver thread to make lace, and let them draw it to the greateſt length and ſubtilty they can, let them draw it to the thinneſſe of a hair, and ſo this thread may be a quarter of a league long in extent, if not more : and in all this length there will not be the ſpace of an Atome which is not covered with gold. Behold a ſtrange and marvellous dilatation of this half leaf : let us do the like to all the reſt of the beaten gold, it will appear that by this means this ſmall button of gold may be ſo extended, that it may reach from this City of *Montpellier* to *Paris*, and far beyond it : into how many million millions of atoms might not this guilded line be cut with ſmall ciſers ?

Now, 'tis eaſie to comprehend that this extenſion, and divi-bility made by ſuch groſſe inſtruments as hammers and ciſers, is not comparable to that which is made by the light and

rayes :

rayes of the Sun. For it is certain, that if this gold may be drawn into ſuch a great length by ſpindles, or wheels of iron, ſome of theſe parts may eaſily be carryed away by thoſe winged Courſers we ſpoke of before, I mean, by the rayes that flie in a moment from the Sun to the earth.

If I did not fear it would prove tedious unto you by my prolixity, I would entertain you with the ſtrange ſubtility of little bodies which iſſue forth from living bodies, by means whereof our dogs in *England* will purſue the ſent of a mans ſteps, or of a beaſts, many miles: and not onely ſo, but they will find in a great heap of ſtones that which a man hath touched with his hand: Therefore it muſt needs be, that upon the earth, or upon the ſtone, ſome material parts of the body remain which hath touched it, yet the body doth not ſenſibly diminiſh, no more than Ambergriſe, and the *Spaniſh* skins, which will ſend out of them an odour during an hundred years, without

any

any diminution of skin or ſmell. In our Country they uſe to ſow a whole field with one ſort of grain, to wit, one year with barly, the next with wheat, the third with beans, and the fourth year they let it reſt, and ſtercorize it, that it may recover its vigour by attraction of the vitall ſpirit it receives from the air, and ſo plow it up again after the ſame degrees. Now, the year that the field is covered with beans, the paſſengers by doe uſe to ſent at a good diſtance off, if the wind blow accordingly, the ſmell of the Beans, if they be in flower: It is a ſmell that hath a ſuavity with it, but fading, and at laſt is unpleaſant and heady. But the ſmell of Roſemary which comes from the coaſts of *Spain*, goes far further: I have ſailed by ſea along thoſe coaſts divers times, and I have obſerved alwayes, that the Mariners know when they are within thirty or forty leagues of the Continent, (I doe not exactly remember the diſtance) and they have this knowledg from the ſmell of the Roſemary, which

which ſo abounds in the fields of *Spain*; I have ſmelt it as ſenſibly, as if I had had a branch of Roſemary in my hand, and this was a day or two before we could diſcover land; 'tis true, the wind was in our faces, and came from the ſhore. Some Naturaliſts write that Vultures have come two or three hundred leagues off, by the ſmell of carrens, and dead bodies left in the field, after ſome bloudy battle; and it was known that theſe birds came from afar off, becauſe there was none uſed to breed neerer; they have a quick ſmelling, and it muſt be that the rotten atomes of thoſe dead carkaſes were tranſported by the aire ſo far, and thoſe birds having once caught the ſent, they purſue it to the very ſource, and the neerer they come to it, the ſtronger it is.

We will conclude here that which we had to ſay touching the great extent of thoſe little bodies, which by the mediation of the Sun beams, and of the light, uſe to iſſue forth out of all bodies that are compoſed

of

of the four Elements, which throng the air, and are carried a marvellous diſtance from the place, and from the bodies whence they have their origen and ſource; the proof and explication of which things hath been the aime of my diſcourſe hitherto.

Now, my Lords, I muſt, if you pleaſe, make you ſee how theſe ſmall bodies that ſo fill, and compoſe the air, are oftentimes drawn to a road altogether differing from that which their univerſall cauſes ſhould make them hold; and that ſhall be our fifth principle.

One may remark within the courſe and œconomy of nature, ſundry ſorts of attractions: as that of ſuction, or ſucking, whereby I have ſeen a ball of lead at the bottom of a long ſteel exactly wrought, follow the air, which one ſucked out of the mouth of a Cannon, with that impetuoſity and ſtrength, that it broke his teeth. The attraction of water or wine that is done by the inſtrument Scyphon is like to this, for by meanes of that, one liquor is made

made to passe from one vessell into another, without changing any way the colour, or rising of the lees There is another sort of attraction, which is called magneticall, whereby the loadstone draws the iron. Another electrick, whereby the Jett-stone draws unto it straws There is another of the Flame, when the smoke of a candle put out, draws the flame of that which burns hard by, and makes it descend to light that which is out. There is another of *Filtration*, whereby a humid body mounts upon a dry body, or when the contrary is done. Lastly, when the fire, or some hot body draws the air, and that which is mixed therewith.

We will treat onely here of the two last species of attraction, I have sufficiently spoken of the rest in another place. *Filtration* may seem to him who hath not attentively considered it, nor examined by what circumstances so hidden a secret of nature comes to passe, and to a person of a mean and limited understanding,

to

to be done by ſome occult virtue, or property, and will perſwade himſelf, that within the Filtre, or ſtrayning Inſtrument, there is ſome ſecret Sympathy, which makes water to mount up contrary to its naturall motion.

But he who will examine the buſineſs as it ought to be, obſerving all that is done, without omitting any circumſtance, will find there is nothing more naturall, and that it is impoſſible it ſhould be otherwiſe. And we muſt make the ſame judgement of all the profound and moſt hidden myſteries of nature, if one would take the pains to diſcover them, and ſearch into them with judgement.

Behold then how *Filtration* is made, they uſe to put a long toung of cloth, or cotten, or ſpongy matter, within an earthen pot of water or other liquor, letting hang upon the brim of the pot a good part of the cloth, and one ſhall ſee the water preſently mount up, and paſſe above the brink of the veſſell, and

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and drop at the lower end of the piece of cloth, upon the ground, or within some vessell: and the Gardners use this way to water their plants and flowers in Summer by degrees. As also the Apothecaries, and Chymists, to separate their liquors from their dregs and residences.

To comprehend the reason why the water ascends in this manner, let us neerly observe all that is done. That part of the cloth which is within the water, becomes wetted, to wit, it receives and imbibes the water through its parts that were at first spongy and dry. This cloth swells in receiving the water, for two bodies joyned together, require more room than one of them would by it self. Let us consider this swelling, and augmented extension in the last thread of them which touch the water, *viz.* in that on the superficies, which must be distinguished from the rest, and marked at the two ends, (as a line) with A. B. and the thread which immediately

follows,

follows, and is above it, muſt be C. D. and the following E. F. then with G. H. and ſo to the end of the toung: I ſay then that the thread A. B. dilating it ſelf, and ſwelling by means of the water which enters twixt its fibres or ſtrings, approcheth by little and little to C. D. which is yet dry, becauſe it toucheth not the water; but when A. B. is grown ſo groſſe and ſwelling, by reaſon of the water which enters, that it fills all the vacuity, and all the diſtance which lies twixt it and C. D. as alſo that it preſſeth againſt C. D. by reaſon of its extenſion, which is greater then the ſpace was betwixt them both, then it wets C. D. becauſe the thread A. B. being compreſſed, the exterior part of the water which was in it, coming to be puſhed on upon C. D. ſeeks there a place, and entreth within the threads, and wets them, in the ſame manner as at firſt the exterior and higheſt part became wet. C. D. being ſo wetted, it ſhall dilate it ſelf as A. B. did, and conſequently preſſing a-

gainſt

gainſt E. F. it cannot chuſe bnt work the ſame effect in it, which before it had received by the ſwelling and dilatation of A. B. and ſo by gentle degrees every thread wets its neighbour, untill the very laſt thread of the tounge of cloth. And it is not to be feared that the continuity of the water will break, aſcending this ſcale of cords, or that it will recoile backwards, for thoſe little ladders, ſo eaſie to be mounted, render the aſcent the more eaſie, and the woolly fibres of every thread ſeem to reach their hands to help them up at every pace; and ſo the facility of getting upwards together with the fluidneſſe of the water, and the nature of quantity, which tends alwayes to the uniting of ſubſtances, and of bodies which it clothes, when there occurs no other predominant cauſe to break and divide it, cauſeth that the water keeps it ſelf in one piece, and paſſeth above the brink of the pot. After that its voyage is made more eaſie, for it goes after its naturall panching, alwayes downwards.

wards. And if the end of the cloth hangs lower without the pot, then the ſurface of the water within the pot, the water ſpills on the earth, or on ſome veſſel placed beneath, as we ſee that a heavier cord being hung upon a pully, the longeſt and heavieſt falls upon the ground, and carrieth away the ſhorteſt, and lighteſt, making it paſſe above the pully. But if the outward end of the cloth which is without the pot were horizontall with the ſurface of the water, and did hang no lower then it, the water would be immoveable: as the two ſides of a balance, when there is equall weight in both the ſcales. And if one would poure out the water that is in the pot, in ſuch ſort that the ſuperficies did grow lower then the end of the cloth; in that caſe the aſcending water becoming more heavy then the deſcendant on the other ſide without the pot, would call back that which was gone out before, and was ready to fall, and would make it thruſt on, and return to its former pace, and

enter

enter again into the pot, to mingle again with the water which lyes therein.

You ſee then all this myſtery, which at firſt was ſo ſurprizing, diſplayed and made as familiar and naturall, as to ſee a ſtone fall down from the air. Tis true, that to make a demonſtration thereof by an exact and compleat rigour, we muſt adde other circumſtances, which we have done at length in another Diſcourſe, wherein I have expreſſely treated of this ſubject. But that which I now ſay is ſufficient upō this occaſiō to give a tincturehow this ſo notable an attraction is made.

The other attraction which is made by fire, and draws unto it the ambient air, with the ſmall bodies therein, is donne thus;

The Fire acting according to its own nature, (which is to puſh on a continuall river, or exhalation of its parts, from the center to the circumference, and out of its ſource,) carrieth away with it the air which is adjoyned, and ſticking to it on all ſides, as the water of a river drawes along,

along with it the earth of that channel or bed through which it glides. For the aire being humid, and the fire dry, they cannot do leſſe than embrace, and hug one another. But there muſt a new aire come from the places circumjacent, to fill the room of that which is carried away by the fire, otherwiſe there would a vacuity happen, which nature abhors. This new air remains not long in the place which it comes to fill, but the fire, which is in a continuall carreer, and emanation of its parts, carries it preſently with him, and draws the new aire, and ſo there is a perpetuall, and conſtant current of the aire, as long as the action of fire continues. We dayly ſee the experience hereof, for if one makes a good fire in ones Chamber, it draws the aire from the door, and windows, which though one would ſhut, yet there be crevices and holes for the aire to enter, and coming near them, one ſhall hear a kind of whiſling noiſe, which the aire makes in preſſing to enter, and 'tis the ſame cauſe that produceth

ceth the ſound of the Organ and Flute; and he who would ſtand between the crevices and the fire, he ſhould find ſuch an impetuoſity of that artificiall wind, that he would be ready to freeze, while he is ready to burn the other ſide next the fire. And a candle of wax being held in this current of the wind would melt by her flame blown againſt the wax, and waſt away in a very ſhort time: whereas if that candle ſtood in a calme place, that her flame might burn upward, it would laſt much longer. But if there be no paſſage whereby the air may enter into the Chamber, the one part then of the vapour of the wood which ſhould have converted to flame, and ſo mounted up the funnel of the chimney, deſcends downward againſt its nature, for to ſupply the defect of air within the ſaid Chamber, and fills it with ſmoke, but at laſt the fire choaks, and extinguiſheth for want of air. Whence it comes to paſſe that the *Chymiſts* have reaſon to ſay, that the air is the life of the fire, as well

well as other animals. But if one puts a baſon, or veſſell of water before the fire upon the hearth, there will be no ſmoke in the Chamber, although it be ſo cloſe ſhut that the air cannot enter, for the fire attracts parts of the water, which is a liquid ſubſtance, and eaſie to move out of its place, which aquatick parts rarifie themſelves into air, and thereby perform the functions of the air. This is more evidently ſeen if the Chamber be little, for then the air which is there penned in, is ſooner raiſed up, and carryed away. And by reaſon of this attraction, they uſe to make great fires, where there is houſhold-ſtuffe of men that died of the Peſtilence, to diſ-infect them. For by this inundation of air which is drawn the fire doth as it were ſweep the walls, the planks, with other places of the Chamber, and takes away thoſe little putrified, ſharp, corroſive, and venomous bodies, which were the infections that adhered unto it, drawing them into the fire, where they are partly burnt,

and partly ſent up into the chimney, accompanied with the atoms of the fire and the ſmoke. It is for this reaſon that the great *Hippocrates*, who dived ſo far into the ſecrets of Nature, disinfected, and freed from the plague a whole Province, or entire Region, by cauſing them to make great fires every where.

Now, this manner of attraction is made, not onely by a ſimple fire, but by that which partakes of it, *viz.* by the heated ſubſtances: and that which is the reaſon and cauſe of the one, is alſo the cauſe of the other. For the ſpirits, or ignited parts evaporating from ſuch a ſubſtance, or hot body, carry away with them the adjacent aire, which ought neceſſarily to be nouriſhed by ſome other aire, or by ſome matter which keeps the place of the aire, as we have ſpoken of the baſon, and tub of water put before the fire to hinder ſmoke. It is upon this foundation that Phyſitians do ordain the hot application of Pigeons, or young dogs, or ſome other hot animals, to the

the foſes of the feet, or the hand-wriſts, or the ſtomacks, or navills of their patients, to extract out of their bodies the wind, or ill vapours which infect them; and in time of contagion, or univerſall infection of the aire, pigeons, cats, dogs, with other hot animals, uſe to be killed, which make continually a great tranſpiration or evaporation of ſpirits, becauſe the aire by thoſe attractions it makes, taking the room of the ſpirits, which iſſue forth of evaporation, the peſtiferous atoms which are ſcattered in the aire, and accompany it, uſe to ſtick to their feathers, skins, or furres.

And for the ſame reaſon we ſee that bread coming hot from the Over, draws unto it the muſt of the cask, which ſpoiles the wine, if they put it hot upon the bung. And that onions, & ſuch hot bodies which perpetually exhale unto them the fiery parts, which appears by the ſtrength of their ſmell, are quickly taken with infectious airs, if they be expoſed unto them, which is one of the

ſignes to know whether the whole maſſe of the air be univerſally infected.

And one might reduce to this head the great attraction of air, which is made by calcin'd bodies, and particularly by Tartar, all ignited by the violent action of the fire upon it, which is heaped together, and bodified among its ſalt: for I have obſerved that it attracts unto it nine times more air then it weighs it ſelf. For if one ſhould expoſe to the air a pound of ſalt of Tartar well calcin'd, and burnt, it will afford you ten pound of good oyl of Tartar, drawing unto it, and ſo bodifying the circumjacent air, and that wherewith tis mingled; as it befell that oyl of Tartar which *Monſieur Ferrier* made me, whereof I ſpake before. But methinks that all this is but little compared to the attraction of air, which was made by the body of a certain Nunne at *Rome*, whereof *Petrus Servius Urban* the Eighth's Phyſician, makes mention in a book which he hath publiſhed, touching the ma

marvellous accidents which he obſerved in his time. Had I not ſuch an Author, I dur not produce this Hiſtory, although the Nunne her ſelf did confirm it unto me, and that a good number of Doctors of the faculty of Phyſick at *Rome*, did aſſure me of the truth thereof: There was a Nunne, that by exceſſe of faſting, of watchings, and mental oriſons, was ſo heated in her body, that ſhe ſeemed to be all on fire, and her bones dryed up, and calcin'd: This heat then, this internal fire, drawing the air ſo powerfully; this air did incorporate within her body, as it uſeth to doe in ſalt of Tartar, and the paſſages being all open, it got to thoſe parts where there is moſt ſeroſity, which is the bladder, and thence ſhe rendred it in water among her urine, and that in an incredible quantity, for ſhe voided during ſome weeks, more than two hundred pounds of water every four and twenty hours. With this notable example I will put an end to the experiments I have ur-

ged to prove and explicate the attraction which is made of aire, by hot and ignited bodies, which are of the nature of fire.

My ſixth Principle ſhall be, that when fire, or ſome hot body attracts the aire, and that which is within the air, if it happens that within that air there be found ſome diſperſed atoms of the ſame nature with the body which draws them, the attraction of ſuch atoms is made more powerfully, then if they were bodies of a different nature, and theſe atoms doe ſtay, ſtick, and mingle with more willingneſſe with the body which draws them. The reaſon hereof is the reſemblance and Sympathy they have one with the other. If I ſhould not explicate wherein this reſemblance conſiſted, I ſhould expoſe my ſelf to the ſame cenſure and blame, as that which I taxed at the beginning of my Diſcourſe, touching thoſe who ſpeak but lightly and vulgarly of the Powder of Sympathy, and ſuch marvails of nature. But when I ſhall

have

have cleared that which I contend for by ſuch a reſemblance and conveniency, I hope then you will reſt ſatisfied. I could make you ſee that there are many ſorts of reſemblances which cauſe an union between bodies, but I will content my ſelfe to declare here onely three ſignall ones.

The firſt reſemblance ſhall be touching weight, whereby bodies of the ſame degree of heavineſſe doe aſſemble together, the reaſon whereof is evident, for if one body were more light, it would poſſeſſe a higher ſituation than the heavier body, as on the contrary, if a body were more weighty, it would deſcend lower than that which is leſſe heavy, but both having the ſame degree of heavineſſe, they keep company together in *æquilibrio*, as one may ſee by experience in this gentile example, which ſome curious ſpirits uſe to produce, for to make us underſtand how the four elements are ſituated one above the other, according to their weight and heavineſſe. They

uſe to put in a viall the ſpirit of wine tinctur'd with red, to repreſent the fire; the ſpirit of Turpentine tinctured with blew, for the air; the ſpirit of water tinctured with green, to repreſent the element of water; and to repreſent the Earth, the Powder of ſome ſolid metal enamell'd; you ſee them one upon the other without mixing, and if you ſhake them together by a violent agitation, you ſhall ſee a Chaos, ſuch a confuſion, that it will ſeem there's no particular atomes that belong to any of thoſe bodies, they are ſo huddled pell-mell together. But when this agitation is agitated, you ſhall ſee preſently every one of theſe four ſubſtances go to it's natural place, calling again, and labouring to unite all their atoms in one diſtinct maſſe, that you ſhall ſee no mixture at all.

The ſecond reſemblance of bodies which draw one another, and unite, is among them which are of the ſame degree of rarity and denſity. The nature and effect of *Quantity*

is

is to reduce to unity all things which it finds, if there interpoſe not ſome other ſtronger power, (as the differing ſubſtantiall forme, which doth multiply it) doe not hinder. And the reaſon of that is evident, for the eſſence of *Quantity* is a diviſibility, or capacity to be divided, which is as much to ſay, as to make it many; whence it may be inferred that *Quantity* it ſelf is not many, therefore ſhe is of her ſelf, and in her own nature, a continued extenſion: ſeeing then that the nature of *Quantity* in generall tends to unity, and continuity, the firſt differences of *Quantity*, which are rarity and denſity, muſt produce the ſame effect of unity and continuity in thoſe bodies which convene in the ſame degree with them. For proof whereof, we find that water doth unite and incorporate it ſelf ſtrongly and eaſily with water, oyle with oyle, the ſpirit of wine with ſpirit of wine; but water and oyle can hardly unite, nor mercury with the ſpirit of wine, and other bodies of differing denſity and tenuity.

The third reſemblance of bodies which unite and keep themſelves ſtrongly together, is that of Figure: I will not ſerve my ſelf here with the ingenious conceit of a great perſonage, who holds that the continuity of bodies reſults from ſome ſmall hookings or claſpings, which keep them together, and are differing in bodies of a differing nature. But not to extend my ſelfe too diffuſively in every particularity, I will ſay in groſſe, as an apparent thing, that every kind of body affects a particular figure. We ſee it plainly in the ſeverall ſorts of Salt, peel and ſtamp them ſeparately, diſſolve, coagulate, and change them as long as you pleaſe, they come again alwayes to their own naturall figure, after every diſſolution, and coagulation. The ordinary ſalt doth form it ſelf alwayes in cubes of four-ſquare faces, ſalt-peter in formes of ſix faces: *Armoniac* ſalt in *Hexagons* of ſix points, as the ſnow doth, which is ſexangulary. Whereunto Mr. *Davi-ſon* attributes the pentagonary figure

gure of every one of thoſe ſtones which were found in the bladder of *Monſieur Pelletier*, to the number of fourſcore; for the ſame immediate efficient cauſe, which is the bladder, had imprinted its action both within the ſtones, and the ſalt of the urine. The Diſtillators obſerve, that if they powre upon the dead head of ſome diſtillation, the water which was diſtilled, it imbibes it, and re-unites incontinently, whereas if one would powre any other water of an heterogeneous body, it ſwims on the top, and incorporates with much difficulty. The reaſon is, that the diſtill'd water which ſeems to be an homogeneous body, although it is compoſed of ſmall bodies of diſcrepant figures, as the *Chymiſts* do plainly demonſtrate, and theſe atoms being chaced by the action of fire, out of their own chambers, or beds, which appropriated unto them by an exact juſtneſſe, when they come back to their ancient habitations, *viz.* to the pores which are left in the dead heads, they accommo-

date

date themſelves, and amiably rejoyn and commenſurate together. The ſame happens when it rains after a long drought; for the earth immediately drinks up the water, which had been drawn up by the Sun, whereas any other ſtrange liquor would enter with ſome difficulty. Now, that there are differing pores in bodies which ſeem to be homogeneous, *Monſieur Gaſſendus* affirms it, and undertakes to prove it by the diſſolution of ſalts of differing natures in common water, and ſayes he to this effect; that when you have diſſolved common ſalt, as much as it can bear, if you put onely a ſcruple more, it will leave it entire in the bottom, as if it were ſand, or plaiſter; nevertheleſſe, it will diſſolve a good quantity of Salt-peter, and though it toucheth not this ſalt, it will diſſolve as much of Armoniacall ſalt, and ſo others of different figures. Inſomuch as I have obſerved elſewhere, we ſee plainly by the œconomy of Nature, that bodies of the ſame figure uſe to mingle more

ſtrongly,

ſtrongly, and unite themſelves with more facility, which is the reaſon why thoſe that make a ſtrong glue to glue together broken pots of Porcelain, or Chry al, or ſuch ſtuff, do alwayes mingle with the glue the powder of that body which they endeavour to reunite: And the Goldſmiths themſelves, when they go about to ſolder together pieces of gold, or of ſilver, they mingle thoſe bodies alwaies in their own duſt.

Having hitherto run through the reaſons and cauſes why bodies of the ſame nature draw one to another with greater facility and force than others, and why they unite with more promptitude, lets now ſee, according to our method, how experience confirmes this diſcourſe, for in naturall things we muſt have recourſe, *en dernier reſſort*, to experience. And all reaſoning that is not ſupported ſo ought to be repudiated, or at leaſt ſuſpected to be illegitimate.

Tis an ordinary thing, when one finds

finds himſelf burnt as in the hand, he holds it a good while as near the fire as he can, and by this means the ignited atomes of the fire, and of the hand mingling together, and drawing one another, and the ſtronger of the two, which are thoſe of the fire, having the maſtery, the hand finds it ſelf much eaſed of the inflammation which it ſuffered. Tis an ordinary remedy, though a naſty one, that they who have ill breaths, hold their mouths open at the mouth of a Privy, as long as they can; and by the reiteration of this remedy, they find themſelves cured at laſt, the greater ſtink of the Privy drawing unto it, and carrying away the leſſe, which is that of the mouth. They who have been pricked, or bit by a Viper, or Scorpion, hold over the bitten, or pricked place, the head of a Viper or Scorpion bruiſed, and by this means the poyſon, by a kind of filtration way, going on to gaine the heart of the party, returns back to its principles, and ſo leaves the party well recovered. In time of common

common contagion, they uſe to carry about them the powder of a toad, and ſometimes a living toad or ſpider ſhut up in a box; or elſe they carry arſnick, or ſome other venomous ſubſtance, which draws unto it the contagious air, which otherwiſe would infect the party: and the ſame powder of a toad draws unto it the poyſon of a peſtilentiall cole. The Scurf or Farcy is a venomous and contagious humour within the body of a horſe; hang a toad about the neck of the horſe, in a little bag, and he will be cured infallibly; the toad, which is the ſtronger poyſon, drawing to it the venome which was within the horſe. Make water to evaporate out of a ſtove, or other room, cloſe ſhut, if there be nothing that draws this vapor, it will ſtick to the walls of the ſtove, and as it cools, it recondenſeth there into water: but if you put a baſon or bucket full of water into any part of the ſtove, it will attract all the vapor which filled the chamber, and ſo doing, no part of the wall will be

wetted,

wetted. If you dissolve mercury, which resolving into smoke, doth passe into the recipient, put into the head of the Limbick a little thereof, and all the mercury in the Limbick will gather there, and nothing will passe into the recipient. If you distill the spirit of salt, or of vitriol, or the baume of Sulphur, and leaving the passage free betwixt the spirit and the dead head whence it issued forth, the spirits will return to the dead head, which being fixt, and not able to mount up, drawes them unto it.

In our Country, and I think tis so used here, they use to make provision for all the year of Venison-pasties, at the season that their flesh is best, and most savory, which is in July and August; they bake it in earthen pots, or Rye-crust, after they have well seasoned it with salt and spices, and being cold, they cover it six fingers deep with fresh butter, that the air may not enter: Nevertheless tis observed after all the diligence that one can make, that when the living beasts

beasts which are of the same nature and kind, are in Rut, the flesh which is in the por smells very rank, and very much changed, having a stronger taste, because of the spirits which come at this season from the living beasts, which spirits are attracted naturally by the dead flesh; and then one hath much ado to preserve it from being quite spoiled: but the said season being passed, there is no danger or difficulty to keep it gustfull all the year after.

The wine-merchants observe in this Country, and every where else where there is wine, that during the season that the Vines are in flower, the wine which is in the Cellar makes a kind of fermentation, and pusheth forth a little white lee, (which I think they call the mother of the wine) upon the surface of the wine, which continueth in a kind of disorder, untill the flowers of the Vines be fallen, and then this agitation or fermentation being ceased, all the wine returns to the same state it was in before.

No

Nor is it lately that this obſervation hath been made, but beſides divers others, who ſpeak hereof, St. *Ephrem* the Syrian in his laſt Will and Teſtament, ſome 1300 years ago, reports this very ſame circumſtance of wine, which ſenſibly ſuffers an agitation and fermentation within the veſſel the ſame time that the Vines ſeem to exhale their ſpirits in the Vineyards. He makes uſe of the ſame example in dry onions, which bud in the houſe, when thoſe in the garden begin to come out of the earth, and to embalme the air with their ſpirits; ſhewing thereby by theſe known examples of nature, the communication between living perſons, and the ſouls of the dead. Now, thoſe winy ſpirits that iſſue from the buds and flowers, filling the air, (as the ſpirits of Roſemary uſe to do in *Spain*) they are drawn into the veſſels by the connaturall and attractive vertue of the wine within: and theſe new volatil ſpirits entring, do excite the moſt fixed ſpirits of the wine, and ſo cauſe a fermentation, as if one ſhould powre therein new or ſweet wine: for

in all fermentations, there is a ſeparation made of the terreſtrial parts from the oily, which come out of the eſſentiall parts, and ſo the lighteſt mount up to the ſuperficies, the heavieſt become Tartar Lees, which fall into the bottom. But in this ſeaſon, if one be not very carefull to keep the wine in a proper, and temperate place, and keep the Cask full, and well bungd, and uſe other endeavours, which are ordinary with Wine-Coupers, one runs a hazard to have his wine impaired, or quite ſpoiled, becauſe that the volatil ſpirits comming to evaporate themſelves, they carry away with them the ſpirits of the wine that is barrelled by exciting them, and mingling with them. As in like manner the oyle of Tartar, which *Monſieur Ferrier* made, attracting to it ſelf the volatil ſpirits of Roſes, diffuſed in the air in their ſeaſon, ſuffered ſuch a fermentation, and made every year new attractions of the like ſpirits, in regard of the affinity which this oyle had contracted with thoſe ſpirits at its firſt

birth,

birth, whereof it was deprived as the ſeaſon paſſed. And tis for the very ſame reaſon that a table-cloth, or napkin, ſpotted with mulberries, or red wine, is eaſily whitened again at the ſeaſon that the plants do flower; whereas at any other time theſe ſpots can hardly be waſhed away. But tis not onely in *France* and other places, where Vines are near Cellars of wine, that this fermentation happens; in *England*, where we have not Vines enough to make wine, the ſame thing is obſerved, yea and ſome particularities beyond. Although they make no wine in our Country to any conſiderable proportion, yet we have wine there in great abundance, which is brought over by the Merchants: It uſeth to come principally from three places, *viz.* from the *Canaries*, from *Spain*, and from *Gaſcony*. Now theſe Regions being under different degrees and Climates in point of latitude, and conſequently one Country is horter or colder then the other; or that the ſome vegetals grow to

maturity

maturity ſooner, it comes to paſſe that the aforeſaid fermentation of our differing wines advanceth it ſelf more or leſſe, according as the Vines whence they proceed do bud and flower in the region where they grow: it being conſentaneous to reaſon, that every ſort of wine attracts more willingly the ſpirits of thoſe Vines whence they come, than of any other.

I cannot forbear but I muſt make ſome digreſſion here, to unfold ſome other effects of nature, which we ſee often, and are not leſſe curious than the moſt principall which we treat of, and will ſeem to be derived from more obſcure cauſes, notwithſtanding in many circumſtances they depend on the ſame principles, and in many much differing, It is touching moles or marks which happen to infants, when their mothers, during the time of their pregnancy, have longed after ſome particular things. To proceed after my accuſtomed manner, I will fall to exemplifie. A Lady of high condition, which many of this

this Assembly know, at least by reputation, hath upon her neck the figure of a Mulberry, as exactly as any Painter, or Sculptor can possibly represent one, for it bears not onely the colour, but the just proportion of a Mulberry, and is as it were embossed upon her flesh. The Mother of this Lady being with child, she had a great mind to eate some Mulberries, and her imagination being satisfied, one of them casually fell upon her neck, the sanguine juyce whereof was soon wiped off, and she felt nothing at that time. The child being born, the perfect figure of a Mulberry was seen upon her neck, in the same place where it fell upon the mothers, and every year, in Mulberry-season, this impression, or rather excressence of flesh did swell, grow big, and itch.

Another maid which had the like mark of a Stawberry, was more incommodated therewith, for it inflamed and itched in Strawberry-season, but it broke like an Impostume, whence issued forth a sharp

corrosive

corroſive humour. But a skilfull Surgeon took all away to the very roots, by cauterizing; ſo that ſince that time ſhe never felt any pain or change in that place which did incommodate her ſo much, it being become a ſimple ſcar.

Now then, lets endeavour to penetrate if we can the cauſes and reaſons of theſe marvellous effects. But to go the more hanſomly to work, that within the actions of all our ſenſes, there is a materiall and corporall participation, *viz.* that ſome atoms of the body operate upon the ſenſes, enter into their organs, which ſerve them as funnels, to conduct and carry them to the brain, and to the imagination. This appears evidently in vapours and ſavours. And concerning the hearing, the exterior air being agitated, doth cauſe a motion within the membrane, or tympane of the ear, which gives the like ſhaking to the hammer which is tyed thereunto, who beating upon his Anvil, cauſes a reciprocall motion in the air, which is ſhut within the

the crannies of the ear, and this is that which we usually call sound.

Touching the sight, tis evident that the Light reflecting upon the body, enters into the eyes, and cannot avoid, but it must bring with it some emanations of the body whereon it reflects, as we have established in the second Principle.

It remains now to shew that the like is made within the grossest of our senses, which is the Touch or Feeling: For if it be true, as we have shewn, that every body sends forth a continuall emanation of atomes out of it self, it makes much for the assertion of this truth. But to render this truth yet more manifest, and take away all possibility of doubt, I will demonstrate it so evidently to the eye, that every one may make an experience thereof in a quarter of an hour, if he be so curious, yea in a lesse compasse of time.

I believe you know the notable affinity which is betwixt gold and quick-

quick-ſilver; if mercury toucheth gold it ſticks cloſe unto it, and whitens it in ſuch ſort, that it ſcarce appeareth gold, but ſilver onely; if you caſt this blanched gold into the fire, the heat chaſeth, and drives away the mercury, and the gold returns to its former colour; but if you do this oftner, the gold calcines, and then you may pound, and reduce it to powder.

Now there is no diſſolvant in the World that can well calcine, and burn the body of gold, but quick-ſilver. I ſpeak of that which is already formed by nature, without engaging my ſelf to ſpeak of that which is ſpoken of among the ſecrets of Philoſophy. Take then a ſpoonfull of mercury in ſome porcelan, or other diſh, and finger it with one hand if you have a ring of gold on the other, it will become white, and covered with mercury, though it doth not any way touch it. Moreover, if you put a leaf of gold, or a crown of Gold in your mouth, and if you put but one of your toes in a

thing where mercury is, the gold which is in your mouth, though you ſhut up your lips never ſo cloſe, ſhall turn white, and laden with mercury: then if you put this gold into the fire to make the mercury evaporate, and do reiterate the ſame thing, your gold will be calcined, as if you had by amalgation joyned mercury therewith corporally. And all this will yet be done more ſpeedily and effectually, if in lieu of common mercury, you make uſe of mercury of antimony, which is much hotter, and more penetrating, and though you drive it away by force of fire, it will carry away with it a good quantity of the ſubſtance of the gold; in ſuch ſort, that reiterating often this operation, there will no more gold remain for you to continue, your experiments. If then that cold mercury doth ſo penetrate the whole body, we ought not to think it ſtrange, that ſubtile atomes of fruit compoſed of many ignited parts will paſſe with more facility and quickneſſe. I will further make

you

you ſee how ſuch ſpirits and emanations do ſuddenly alſo penetrate ſteel, though it be a ſubſtance ſo compacted, cold, and hard, that the ſaid atomes may keep their reſidence there many moneths and yeares. Within a living body, ſuch as is mans, the intern ſpirits do aid, and contribute much facility to the ſpirits that are without, ſuch as thoſe of fruits are, to make their journey the more eaſie to the brain. The great Architect of nature in the fabrick of humane body, the maſterpiece of corporall nature, hath placed there ſome intern ſpiritts, to ſerve as centinells to bring their diſcoveries to their General, *viz.* to the imagination, which is as it were the Mi reſſe of the whole family, whereby a man may know and underſtand what is done without the Kingdome, within the great world; and that it may ſhun what is noxious, and ſeek after that which is profitable. For theſe centinels, or intern ſpirits, with all the inhabitants of the ſenſitive organs, are not able

to judge alone : insomuch, that if the imagination or thought be distracted strongly to some object, these intern spirits do not know whether a man hath drunk the wine which he hath swallowed, if perchance seeing a person who comes to salute him, he fixeth his eye upon him all the while, or if he listens attentively to the aire of some melodious song, or musicall instrument, for the inward spirits bring all their acquisitions to the imagination ; and if she be not more strongly bent upon another object, she falls a forming certain Ide'a's and Images, because that the atomes from without being conveyed by these intern spirits to our imagination, erect there the like edifice, or else a model in short resembling the great body whence they come forth. And if our imagination hath no more use of those significative atomes for the present, she rangeth them in some proper place within her Magazin which is the memory ; where she can repeal, and rebuke them when she

pleaseth

pleaſeth. And if there be any object which cauſeth ſome emotions in the imagination, and toucheth her more near than common objects uſe to do, ſhe ſends back her centinels, the internall ſpirits, upon the confines, to bring her more particular news. And thence it proceeds that a man being ſurprized by ſome particular man, or other object, who hath already ſome eminent place in his imagination, be it of deſire, or averſion, then that man ſuddenly changeth colour, and becomes red, then pale, then red again at divers times, according as the miniſters, which are thoſe intern ſpirits, do go quick or ſlow towards their object, then they return with their reports to their Miſtreſs, which is the imagination. But beſides theſe paſſages we ſpeak of, which go from the brain to the externall parts of the body, by the miniſtery of the nerves; there is alſo a great road from the brain to the heart, by which the vital ſpirits do aſcend from the heart to the brain, to be animated, and hereby the imagination ſends

unto the heart, those atomes which she hath received from some external object, and there they make an ebullition betwixt the vitall spirits, which according to the intervening atomes, either cause a dilatation of the heart, and so gladden it, or they do contract it, and so sadden it, and these two differing and contrary actions are the first generall effects, whence proceed afterwards the particular passions, which require not that I pursue them too far in this place, having done it more particularly elsewhere, and more expressely.

Besides these passages, which are common to all men and women, there is another that's peculiar onely to females, which is, from the brain to the matrix, whereby it often falls out that such violent vapours mount up to the brain, and those in so great a number, that they often hinder the operation of the brain, and of the imagination, causing convulsions and follies, with other strange accidents, and by the same channel the

spirits

ſpirits or atomes paſſe with a greater liberty and ſwiftneſſe to the womb or matrix when the caſe requires.

Now lets conſider how the ſtrong imagination of one man doth marvellouſly act upon another man who hath it more feeble and paſſive. We ſee daily, that if a perſon gape, thoſe who ſee him gaping are excited to do the ſame. If one come perchance to converſe with perſons that are ſubject to exceſſe of laughter, one can hardly forbear laughing, although one doth not know the cauſe why they laugh. If one ſhould enter into a houſe where all the World is ſad, he becomes melancholy, for as one ſaid, *Si vis me flere dolendum eſt primùm ipſi tibi*: Women and Children being very moiſt and paſſive, are moſt ſuſceptible of this unpleaſing contagion of the imagination. I have known a very melancholy woman, which was ſubject to the diſeaſe called the Mother, and while ſhe continued in that mood, ſhe thought her ſelf poſſeſſed, and

did ſtrange things, which among thoſe that knew not the cauſe, paſſed for ſupernaturall effects, and of one poſſeſſed by the ill ſpirit: ſhe was a perſon of quality, and all this happened, becauſe of the deep reſentment ſhe had for the death of her Husband: She had attending her four or five young Gentlewomen, whereof ſome were her Kinſwomen, and others ſerved her as Chambermaids. All theſe came to be poſſeſſed as ſhe was, and did prodigious actions. Theſe young Maids were ſeparated from her ſight and communication, and as they had not yet contracted ſuch profound roots of the evill, they came to be all cured by their abſence; and this Lady was alſo cured afterwards by a Phyſitian, which purged the atrabilious humors, and reſtored her matrix to its former eſtate: there was neither impoſture, or diſſimulation in this.

I could make a notable recitall of ſuch paſſions that happened to the Nunnes at *Lodun*; but having done

it

it in a particular Diſcourſe at my return from that Country, where I as exactly as I could diſcuſſed the point, I will forbear ſpeaking thereof at this time, otherwiſe then to pray you to remember, that when two Lutes, or two Harps, near one another, both ſet to the ſame tune, if you touch the ſtrings of the one, the other conſonant harp will ſound at the ſame time, though no body touch it, whereof *Galileo* hath ingeniouſly rendred the reaſon.

Now, to make application to our purpoſe of all that hath been produced to this effect, I ſay that ſince it is impoſſible that two ſeverall perſons ſhould be ſo near one another, as the mother and the infant when he lies in the womb, one may thence conclude, That all the effects of a ſtrong and vehement imagination, working upon another more feeble, paſſive, and tender, ought to be more efficacious in the Mother acting upon her ſon, then when the imaginations of other perſons act

upon them who are nothing to them. And as it is impoſſible that a Maſter of Muſick, let him be never ſo expert and exact, can tune ſo perfectly any two Harps, as the great Maſter of the Univerſe doth the two bodies of the Mother and the Infant; ſo it follows by conſequence, that the concuſſion of the principall ſtring of the Mothers, which is the imagination, ought to produce a greater ſhaking of the conſonant ſtring in the Infant, to wit, his imagination, then the ſtring of a lute being touched, upon the conſonant ſtrings of another: and when the mother ſends ſpirits to ſome parts of her body, the like muſt be ſent to ſome part of the childs body.

Now lets call to memory how the imagination of the mother is full of corporall atoms, which come from the Mulberry, or Strawberry, which felt upon the neck, and breaſt, and her imagination being then ſurprized with an emotion by the ſuddenneſs of the accident, it follows neceſſarily that ſhe muſt ſend ſome of

theſe

these atomes also to the brain of the Infant, and so to the same part of the body where she took the stain first, 'twixt which and the brain there passe such frequent and speedy messengers, as we have formerly set forth. The Infant also on his part, who hath his parts also tuned in an harmonious consonance with the mothers, cannot faile to observe the same movement of spirits 'twixt his imagination and his neck, and his breast, as the mother did 'twixt hers: and these spirits being accompanied with atomes of the Mulberry, which the mother conveyed to his imagination, they make a profound impression, and lasting mark, upon his delicate skin, whereas that of the mothers was more hard. As if one should let fly a Pistol charged with powder onely against a marble, the powder doth nothing but sully it a little, which may quickly be rubd off; but if one should discharge such a Pistol at a mans face, the graines of the powder would pierce the skin, and so stick and dwell there all his life-time, and make

make themſelves known by their black-blewiſh colour, which they alwaies conſerve.

In like manner the ſmall grains or atomes of the fruit which paſſed from the mothers neck to the imagination of the Infant, and thence to the ſame place upon his skin, do lodge, and continually dwell there for the future, and ſerve as a ſource to draw the atomes of the like fruit diſperſed in the aire, according to their ſeaſon, (as the wine in the Tunne draws unto it the volatil ſpirits of the Vines) and in drawing of them that part of the skin where they reſide ferments, ſwells, eats, and inflames, and ſometimes breaks. But to render yet more conſiderable, theſe marvellous marks of longing, (ſince we are upon this ſubject) I cannot forbear to touch alſo another circumſtance, which might ſeem at firſt to be a miracle of nature, beyond the cauſes which I have alledged: but having well eventilated it, we ſhall abſolutely find that it depends upon the ſame principles:

It

It is, that oftentimes it falls out, that the impreſſion of the thing deſired, or longed for, by the mother, falls upon the child, although ſhe touch it not, or that it falls upon her body; Tis ſufficient that ſome other thing do fall, or unexpectedly beat upon ſome part of the woman with child, while ſuch a longing doth predominate in her imagination, and the figure of the thing ſo long deſired after, will be found at laſt imprinted upon the ſame part of the body of the Infant, as it was upon the mother who received the blow. The reaſon hereof is, that the atomes of the thing longed for being raiſed up by the light, go to the brain of the mother with child through the channel of the eyes, as well as other more materiall atomes, proceeding from the corporall touch, would go thither by the guidance of the nerves. And of theſe petty bodies, the mother forms in her imagination a complete model of that whence they flow forth by way of emanation. But if the women be not attached but inwardly,

theſe atomes which are in her imagination, make no other voyage than to her heart, and thence to the imagination, and to the heart of the Infant, and ſo cauſe a reinforcement of the paſſion in them both, which may be moved to ſuch a violent impetuoſity, that if the mother doth not enjoy her longd-for object, this paſſion may cauſe the deſtruction both of the one and of the other, at leaſt prejudice her notably in their health, and ſo make a great change in the body. In the mean time, if ſome unlooked-for blow ſurprize the mother in any part of her body, the ſpirits which reſide in the brain are immediately ſent thither by her imagination, as it happens often in this caſe of longing. But in all other ſuch ſudden ſurprizals, either among women or men, theſe ſpirits are tranſported with the more impetuoſity, the more the paſſion is violent. As when one loves another paſſionately, he runnes ſuddenly to the dore when any knocks, or that —*Hylax in limine latrat*,

hoping

hoping alwayes tis the party which entirely poſſeſſed his thoughts, (for *qui amant ipſi ſibi ſomnia fingunt*) who comes to give him viſit: And theſe ſpirits being moved by this ſudden aſſault, being then mingled with the petty bodies or atomes of the longd-for thing which poſſeſſeth ſo powerfully the fantaſie, they lead them along with themſelves to the part of the body which is ſtruck, as alſo to the ſame part of the body of the Infant, as well as to his imagination. And after that all which happened is but the ſame in order to the mother and the child, when the Mulberry or Strawberry fell upon the neck or breaſt of the Ladies with whom I have entertained you.

Permit me, my Lords, to enlarge my digreſſion a little further in one word, to declare unto you a marvellous accident, known all over the Court of England, in confirmation of the activity and impreſſion which the imagination of the Mother makes upon the body of the Infant whereof ſhe was big. A Lady that

was

was my Kinſwoman, (ſhe was the Neece of Madam *Forteſcu*, the Daghter of Count *Arundel*) came to viſit me ſometimes in *London*; ſne was fair, and of a good feature, and ſhe knew it well, taking great complacency, and not onely to keep her ſelf ſo, but to adde that which ſhe could further: thereupon ſhe was perſwaded that the patches and flies which ſhe put upon her face, gave her a great deal of ornament, therefore ſhe was carefull to wear the moſt curious ſort of them: but as it is very hard to keep a moderation in things which depend more upon *Opinion* than *Nature*, ſhe wore them in exceſſe, and patched moſt of her face with them; although that did not much adde to her beauty, which I took the liberty to tell her; yet I thought it no oportunity then to do any thing that might give her the leaſt diſtaſte, ſince with ſo much civility and ſweetneſſe ſhe came to viſit me. Nevertheleſſe, one day I thought good, in a kind of dolling way, (ſo that ſhe might not ap-

apprehend any diſcontentment) and *Ridentem dicere verum quis vetat* ? to tell her of it ; ſo I let fall my diſcourſe upon her big belly, adviſing her to have a care of her health, whereof ſhe was ſomewhat negligent, according to the cuſtome of young vigorous women, who know not yet what it is to be ſubject to indiſpoſitions ; ſhe gently thanked me for my care herein, ſaying, That ſhe could do no more for the preſervation of her health than ſhe did, though ſhe was in that caſe : you ſhould at leaſt, replyed I, have a care of your child, O for that, ſaid ſhe, there is nothing that can be contributed more. Yet, I told her, ſee how many patches you wear upon your face, are you not afraid that the Infant in your Womb may haply be bo n with ſuch marks on his face ? But ſaid ſhe, What danger is there that my child ſhould bear ſuch marks, though I put them on artificially ? Then you have not heard, replyed I again, the marvellous effects that the imaginations

of

of Mothers work upon the bodies of their children, while they are yet big with them, therefore I will relate unto you ſome of them; and ſo I told her ſundry ſtories upon this ſubject, as that of the Queen of *Ethiopia*, who was delivered of a white boy, which was attributed to a Picture of the Bleſſed Virgin, which ſhe had alwaies near the Teaſter of her bed, whereunto ſhe bore great devotion. I urged another of a woman who was brought to bed of a child all hairy, becauſe of a portrait of Saint John Baptiſt in the Wilderneſſe, where he wore a Coat of Cammels hair. I related unto her alſo the ſtrange antipathy which the late King *James* had to a naked ſword, whereof the cauſe was aſcribed, in regard ſome *Scotch* Lords had entred once violently into the bed-chamber of the Queen his mother, while ſhe was with child of him, where her Secretary, an *Italian*, was diſpatching ſome letters for her, whom they hacked, and killed with naked ſwords before

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her face, and threw him at her feet; and they grew ſo barbarous, that there wanted but little but that they had hurt the Queen her ſelf, who endeavouring to ſave her Secretary, by interpoſing herſelf, had her skin raſed in divers places; which *Buchanan* himſelf makes mention of. Hence it came that her ſon King *James* had ſuch an averſion all his life-time after to a naked ſword, that he could not ſee one without a great emotion of his ſpirits; although otherwiſe couragious enough, yet he could never overmaſter his paſſions in this particular. I remember when he dubbed me Knight, in the ceremony of puting the point of a naked ſword upon my ſhoulder, he could not endure to look upon it, but turned his face another way, inſomuch, that in lieu of touching my ſhoulder, he had almoſt thruſt the point into my eyes, had not the Duke of *Buckingham* guided his hand aright.

I alledged her divers ſuch ſtories to make her apprehend that a ſtrong imagination of the mother might cauſe ſome notable impreſſion upon the body of her child to its prejudice. Moreover, I pray conſider how carefull you are of your patches, and that you have them continually in your imagination; for, I have obſerved, that you have looked upon them ten times ſince you came into this room, in the Looking-glaſs. Doe you not therefore feare that your child may be born with Half-moons upon his face? or rather that all the black patches which you bear up and down in ſmall portions, may aſſemble in one, and appeare in the middle of its forehead, the moſt apparent and remarkable part of the viſage, and may be as broad as a Jacobus; and then what a grace do you think, would it be to the child? O me, ſaid ſhe, rather then that ſhould happen, I would wear no more patches while I am with child: Thereupon at that inſtant ſhe pulled them all off, and

and hurld them away. When her friends ſaw her afterwards without patches, they demanded how it came to paſſe, that ſhe who was eſteemed to be one of the moſt curious beauties of the Court, in point of patches, ſhould ſo ſuddenly give over the wearing of them: ſhe anſwered, that her Uncle, in whom ſhe had a great deal of confidence, aſſured her, that if ſhe wore them during the time that ſhe was with child, the Infant would have a large black patch in the midſt of his forehead. Now, this conceit was ſo lively engraven in her imagination, that ſhe could not be rid of it: And ſo this poor Lady, who was ſo fearfull that her child might not bear ſome black mark in his face, ſhe could not prevent, but that it came ſo into the World, and had a ſpot as large as a Crown of Gold in the midſt of its Forehead, according as ſhe had before figured in her Imagination: it was a Daughter that ſhe brought forth, very beautifull throughout, this excepted. And

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tis but few month s ago that I ſaw her bearing the ſaid mole or ſpot, which proceeded from the force of the imagination of her Mother.

I need not tell you of your neighbour of *Carcaſſona*, who lately was brought to bed of a prodigious Monſter, exactly reſembling an Ape, which ſhe took pleaſure to look upon during the time ſhe was with child, for I conceive you know the ſtory better than I. Nor that of the woman of St. *Maxient*, who could not forbear going to ſee an unfortunate Childe of a poore woman, which was borne without armes; and ſhe her ſelf was delivered afterwards of ſuch a Monſter; who nevertheleſſe had ſome ſmall excreſcencies of fleſh upon the ſhoulders, about the place whence the armes ſhould have come forth. As alſo of her who was deſirous to ſee the execution of a Criminall, who had his neck broken according to the laws of *France*, whereof ſhe took

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an affrighment, which made ſo deep a print upon her imagination, that preſently ſhe fell in labour of her child, and before they could carry her to her lodging, ſhe was brought to bed before her time of a child which had his head ſevered from his body, both the parts yet ſhedding freſh blood, beſides that which was abundantly ſhed in the Womb, as if the Heads-man had done an execution alſo upon the tender young body within the matrix of the Mother. Theſe three Examples, and many others truly alledged, which I could produce, although they manifeſtly prove the ſtrength of the Imagination, would engage me too far, if I ſhould undertake to cleer the cauſes, and unwrap the difficulties which would be found greater then in any of thoſe inſtances wherewith I have entertained you, becauſe that thoſe ſpirits had the power to cauſe ſuch eſſentiall changes, and fearfull effects, upon bodies that were already brought to their ſhapes of perfection,

and

and it may be well believed, that in ſome of them there was a tranſmutation of one ſpecies to another, and the introduction of a new informing form in the ſubject matter, totally differing from that which had been introduced at firſt, at leaſt if that be true which moſt Naturaliſts tell us of, at the animation of the Embryo in the womb: but this digreſſion hath been already too long.

Eſt modus in rebus, ſunt certi denique fines,
Quos ultra citraque nequit conſiſtere rectum.

To return then to the great channel, and threid of our Diſcourſe, the examples and experiments which I have already inſiſted upon in confirmation of the reaſons which I have alledged, do clearly demonſtrate, that the bodies which draw the atome: diſperſed in the aire, attract unto themſelves with a greater power and energy ſuch as are of their own nature, then ſuch as are heterogeneous, and of a ſtrange nature; As wine doth the vinall ſpirits; The oyl

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of Tartar fermented by the levain of Roſes, the volatil ſpirits of the roſe; The fleſh of deer, or veniſon buried in cruſt, the ſpirits of thoſe beaſts; and conſequently all the other things whereof I have ſpoken.

The Hiſtory of the Tarantula in the Kingdom of Naples is very famous; you know how the venome of this animal aſcending by the hurt that the party hath received, being pricked therewith towards the head and the heart, doth excite in his Imagination an impetuous deſire to hear ſome melodious aires, and moſt commonly they are delighted with differing aires; Therefore when they liſten to an aire that pleaſeth them, they begin to dance inceſſantly, and thereby they fall a ſweating in abundance, in ſuch ſort that this ſweat makes a great part of the venome to evaporate, beſides the ſound of the muſick doth raiſe a motion, and cauſeth an agitation among the aerean and vaporous ſpirits which are in the brain, and about the heart, and diffuſed up and

down through the whole body proportionably according to the nature, and cadence of such musick; as when *Timotheus* transported *Alexander* the *Great* with such a vehemency to such and such passions as he pleased; In the like manner also it happens, that when one Lute doth sound, it makes the strings of the other to shake by the motions and tremblings which it causeth in the aire, though it be not touched otherwise at all: We find also oftentimes that the sounds which are no other things than the motions of the aire, cause the like motion in the water; as the sharp sound which is caused by rubbing hard with ones finger the brim of a glasse full of water, doth excite a noise, a turning, and bounding in the water of certain drops, as if the water did dance according to the cadence of the sound: The harmonious sound also of bells in those Countries where they use to be rung to particular tunes doth make the like impression upon the superficies of the rivers that are nigh the steeple,

ſteeple, eſpecially in the night time when there is no other motion, which ſtops, or choakes the other ſupervenient one; For the aire being contiguous, or rather continuous with the water, and the water being ſuſceptible of motion, there's the like motion cauſed in the fluid parts of the water as began in the aire, and the ſame contract which is betwixt the agitated aire, and the water which is by this meanes alſo moved; happens alſo to be betwixt the agitated air, and the vaprous ſpirits which are in thoſe bodies who have been bit by the Tarantula, which ſpirits by conſequence are moved by the agitated air, that is to ſay by the ſound; and that the more efficaciouſly, that this agitation or ſound is proportioned to the nature and temperature of the party hurt: And this intern agitation of the ſpirits and vapours helps them to diſcharge the vaporous venome of the Tarantula which is mixt among all their humours; In the like manner ſtanding puddle waters, and corrupted aires being

Putrified by long repoſe, and the mixture of other noiſome ſubſtances are refin'd and purifi'd by motion; but winter approching, which devoures theſe beaſts, people are freed from this malady; but at the returne of the ſeaſon when they were pricked, the miſchief comes again, and they muſt dance again as they did the year before: The reaſon is, that the heat of ſummer doth ſti: and raiſe up the venome of the beaſt, whereby it becomes as malignant and furious as it was before; And the poyſon being heated, and evaporating it ſelf, and diſperſing in the aire the levain of the ſame poyſon, which remaines in the bodies of them who have been hurt, drawes it unto it ſelf, whereby ſuch a fermentation is wrought, which infects the other humours, whence a kind of ſmoke iſſuing, and mounting to the braine of theſe poor ſick bodies, doth uſe to produce ſuch ſtrange effects.

It is alſo well known, that where there are great dogs, or maſtiffs,

in England, if any be bitten perchance by any of these dogs, they commonly use to kill them, though they be not mad, for fear that the levain of the canine choler which remaines within the body of the party bit draw unto it the malignant spirits of the same dog, which might come to distemper the spirits of the party: And this is not onely practised in England, where there are such dangerous dogs, but also in *France*, according to the report of Father *Cheron*, Provinciall of the *Carmelites* in this Country, in his *Examen de la Theologie mystique*, newly imprinted, and which I have lately read. I will say nothing of artificiall noses, that are made of the flesh of other men, for remedy of the deformity of those who by an extreme excesse of cold have lost their own; which new noses do putrifie as soon as those persons out of whose substance they were taken come to die, as if that small parcell of flesh engrafted upon the face did live by the spirits it drew from its first root and source;

For although this be constantly avouched by considerable authors, yet I will not insist more upon it, and desire you to think that I offer nothing unto you which is not verified by solid tradition, such, as it were a weakneſse to doubt of it.

But it is high time that I should come now to my seventh, and last principle; it is the last turn of the engine, and as I hope will quite batter down the gate which hinders us an entrance to the knowledge of this so marvellous a mystery, and which will imprint such a lawfull mark upon the doctrine which I hold forth, that it will passe for current money. This principle is, that the source of these spirits or the body which attracts them to it selfe, draws likewise after them that which accompanies them, as also that which sticks, and is glued, and united unto them. This conclusion needs not much proof, being evident enough of it self, if there be nailes, pins or ribands tied to the end of a long cord or chain, and if there be a knurle

knurle either of wax, gum, or glue, and that I take this cord or chain by one end, and draw it after me, until the other last end come to my hands, it cannot be otherwise but that I take into my hands at the same time the naile, the pins, the ribands, the knurle, and all that is applied thereunto: I will therefore relate unto you onely some experiments that have been made in consequence of this principle, which will most strongly confirm the others produced before.

The great fertility, and riches of England, consists chiefly in pasturage for the nourishment of beasts. We have the fairest in the world, with abundance of other animals, and principally of Oxen & Cowes. There's not the meanest Cottager but hath a Cow to furnish his family with milk. It is the principall sustenance of the poorer sort of people, as 'tis also in Switzerland, which makes them very carefull in the good keeping, and health of their Cowes; Now, if it happen that in boyling the milk it

swells so high that it sheds over the brim of the skillet, and so comes to fall into the fire, the good woman, or maid, doth presently give over whatsoever she is doing, and runs to the skillet, which she takes off the fire, and at the same time takes a handfull of salt, which useth to be commonly in the corner of the chimney to keep it dry, and throws it upon the cinders whereon the milk was shed: Ask her wherefore she doth so, and she will tell you, that it is to prevent, that the Cow which gave this milk may not have some hurt upon her udder, for without this remedy it would come to be hard and ulcerated, and she would come to pisse blood, and so be in danger to die; Not that this extremity will befall her the very first time, but she will grow ill-disposed, and if this should happen often, would in a short time miscarry. It might seem that some superstition or folly may lie herein, but the infallibility of the effect doth warrant from the last; and for the first many believe

that

that the malady of the Cow is ſupernaturall, or an effect of ſorcery, and conſequently that the remedy which I have alledged is ſuperſtitious; but it is eaſie to diſabuſe any man of this perſwaſion, by declaring how the buſineſſe goes according to the foundations which I have laid; The milk falling from the burning coales is converted to vapour, which diſperſeth, and filtreth it ſelf through the circumambient aire, where it meets the light, and the ſolar rayes, which tranſport it further, augmenting and extending ſtill farther the ſphere of its activity: This vapour of the milk is not alone or ſingle, but is compoſed of fiery atomes which accompany the ſmoke & vapour of the milk, which mingle & unite themſelves therewith; now the ſphere of the ſaid vapour extending it ſelf unto the place where the cow is, her udder, which is the ſource whence the milk proceeded, attracts unto it the ſaid malignant vapours, ſtaying, and ſticking it ſelf there-

together with the fiery atomes that accompanied it. The udder is in part glandulous, and very tender, and so consequently very subject to inflammations, and this fire doth heat, inflame, and make it swell, and in fine makes it hard and ulcerated; The inflamed, and ulcerated udder is near the bladder, which comes likewise to be inflamed, making the anastomoses, and communication which is betwixt the veines and the arteries to open, and to cast forth blood, and to regorge into the bladder, whence ordinarily the urine useth to come forth, and empty it self: But whence comes it, you will say that the salt remedies all this? It is because it is of a nature cleane contrary to the fire, the one being hot, and volatil, the other, cold and fixed; Insomuch that where they use to meet, the salt as it were, knocks down the fire; by precipitating and destroying its action, as it may be observed in a very ordinary accident; The chimneys which are full of soot use to take fire very easily

easily, now, the usuall remedy for that is to discharge a musket into the funnell of the chimney which loosneth and brings down with it the fired soot, and then the disorder ceaseth, but if there be no musket or pistoll, or other instrument to draw down the soot, they use to cast a great quantity of salt on the fire below, and that choakes, and hindreth the atomes of fire, which otherwise would incessantly mount up, and joyn with them above, which by this meanes wanting nouriture consume themselves, and come to nothing; The same thing befalls the atomes which are in a train to accompany the vapour of the milk, for the salt doth precipitate and kill it upon the very place, and if any do chance to scape, and save themselves by the great struglings they make, and go along with the said vapour, they are nevertheless accompanied with the atomes and spirit of the salt which sticks unto them, which like good wrastlers never leave their hold untill they have got the better of their adversary

verſary : And you ſhall obſerve by the by, that there is not a more excellent balme for a burn, than the ſpirit of ſalt in a moderate quantity. It is then apprent, that 'ti; impoſſible to employ any meanes more efficacious to hinder the ill effects of the fire upon the udder of the cow, than to caſt upon her milk, being ſhed over upon the cinders, a ſufficient quantity of ſalt. This effect touching the conſervation of the cowes udder in order to the burning of her milk, makes me call to mind that which divers have told me to have ſeen both in *France* and *England*, viz. when the Phyſicians do examine the milk of a nurce for the child of a perſon of quality, they uſe to make proofs ſundry waies before they come to judge definitively of the goodneſſe thereof, as by the taſte, by the ſmell, by the colour, and conſiſtence thereof; And ſometime they cauſe it to be boyled untill it come to an evaporation, and ſee its reſidence, with other accidents, and circumſtances which may be learnt and diſcerned by

by theſe means : But thoſe of whoſe milk this laſt experiment hath been made, feel themſelves tormented in their papps and duggs, while their milk is a boyling ; therefore having once endured this pain , they will never conſent that their milk ſhall be carried away out of their ſight and preſence , although they will willingly ſubmit to any other proof then that by fire. Now to confirm this experiment of the attraction which the Cowes Udder makes of the fire, and vapour of the burned milk, I am going to declare unto you another of the ſame nature, whereof I my ſelf have ſeen the truth more than once, and whereof any one may eaſily make tryal. Take the excrements of a dog,and hurle it into the fire more then once, at the beginning you ſhall find him heated, and moved, but in a ſhort time you ſhall ſee him as if he were burned all over, panting , and ſtretching out his tongue, as if he had run a long courſe : Now, this alteration befalls him becauſe his entrailes drawing

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unto them the vapour of the burn'd excrement, and with that vapour the atomes of fire which did accompanie it, they are ſo changed and inflam'd, that the dog having alwaies a fever upon him, and not being able to take any nouriſhment, his flancks do lock up, which cauſeth his death at laſt. It were not proper to divulge this experience among ſuch perſons as are ſubject to make uſe of any thing for doing of miſchief, for the ſame effects which happen to beaſts, would fall upon mens bodies, if one ſhould try ſuch a concluſion upon their excrements: There happened a remarkable thing to this purpoſe to a neighbour of mine in England the laſt time I ſojourned there: He had a very pretty and delicate child, and becauſe he would have his eyes alwayes upon him, he entertained the nurſe at his houſe, I ſaw him often, for he was a pragmaticall man, and of good addreſſes, and I had occaſion to uſe ſuch a man; One day I found him very ſad, and his wife a weeping, whereof demanding the

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reaſon, they told me that their little child was very ill, and that he had a Burning-fever, which inflamed all his body over, which appeared by the redneſſe of his face, that he forced himſelf to go to ſtool, but he could do little, and that little which he did was covered with blood, and that he refuſed alſo to ſuck; And that which troubled them moſt, was that they could not conjecture any cauſe how this indiſpoſition ſhould befall him, for his nurſe was very well, her milk was as good as could be wiſned; and in all other things there was as much care had of him as could be; I told them that the laſt time I was with them, I obſerved one particularity whereof I thought fit to give them notice, but ſomething or other ſtill diverted me, It was, that their child making a ſigne that he was deſirous to be ſet on his feet, he let fall his excrements on the ground, and his nurſe preſently took the Fire-ſhovel, and covered it with embers, and then threw all into the fire, the mother began to

make

make her excuſes, that they were not ſo carefull to correct this ill habit of the child, ſaying, that as he advanced in years, he ſhould be corrected for it; I replyed, that twas not for this conſideration that I held this diſcourſe with her, but I was curious to know the reaſon of her childs diſtemper, and conſequently to find ſome remedy; and thereupon I related unto them the like accident, which had happened two or three years before to a child of one of the moſt illuſtrious Magiſtrates of the Parliament of *Paris*, who was bred up in the houſe of a Doctor of Phyſick of great reputation in the ſame town: I told them alſo what I have now related unto you touching the excrements of dogs; and I made reflexions unto them upon that which they had often heard, and which is often practiſed in our Country, which is, that within the villages, which are alwayes dirty in the Winter, if it happens that there be a Farmer who is more cleanly than others, and keeps more neatly the ap-

approches to his houſe than his neighbours do, the boyes uſe to come thither in the night-time, or when it begins to be dark, to diſcharge their bellies there, becauſe that in ſuch Villages there is not much commodity of eaſements; beſides that in ſuch places, ſo fitly accommodated, theſe gallants, the boyes, are out of danger to ſink into the dirt, which otherwiſe might riſe up higher then their ſhooes; but the good Houſwifes in the morning when they open their doors, uſe to find ſuch an ill-favoured ſmell, that it tranſports them with choler: but they who are acquainted with this trick go preſently and make red-hot a broach or fire-ſhovel, and then thruſt it into the excrements all hot, and when it grows cold, they heat it again oftentimes to the ſame purpoſe: In the mean time the boy which made the ordure feels a kind of pain and collick in his bowels, with an inflammation in his fundament, and a continuall deſire to go to ſtool, and he is hardly quit of it

till

till he ſuffer a kind of fever all that day, which is the cauſe that he returnes thither no more: And theſe women to be freed from the like affronts do paſſe among the Ignorant for Sorcereſſes, and Witches, being they can torment people in that faſhion without ſeeing or touching them. This Gentleman did not diſallow what I told him, but was confirmed farther when I bid him look into the fundament of his child, for without doubt he would find it very red, and inflamed; and that vinting him, he ſhould find that it was full of pimples, and excoriated; It was not long after that this poor little languiſhing child with much pain and pitifull cryes, voyded ſome ſmall matter, which in ſtead of ſuffering it to be caſt into the fire, or covered with embers, I cauſed to be put into a baſon of cold water which was ſet in a freſh place, which was continued to be done every time

time that the child gave occaſion. He began to amend the very ſame hour, and within four or five dayes he was perfectly well recovered. But fearing to treſpaſſe too much upon your patience; I will intertaine you but with one experiment more very familiar in our Countrey; and afterwards I will make a ſummary of all that hath been ſaid, to make you perceive the force, and value of this whole Diſcourſe.

We have in England (as I touched before) excellent paſturage which nouriſh and fat the Cattle, ſo abundantly, that it falls out often, that the Oxen have ſo exceſſive ſtore of fat, that it doth extend it ſelf in a great quantity to their leggs, as alſo to their feet, and hoofs, which oftentimes cauſeth Impoſtumes in the bottom of their feet, which ſwell, and caſt out a great deal of core, and putrified matter which hindreth the beaſt to go; The Owners are very ſorry when they obſerve it, though the beef be never

never the worſe for the Shambles; yet are they damnified thereby, in regard that not being able to bring them to *London*, (where the beſt market is for fat Beefs through all *England*, as *Paris* is for *Auvergne*, *Normandy*, and other Provinces of *France*,) I ſay the Graſiers not being able to bring them to *London*, they are conſtrained to kill them upon the place, where their fleſh is not worth half the price that they might have got in *London*. Now there is a remedy for this inconvenience, which is, that one muſt obſerve where the Oxe, Cow, or Heifer, doth ſet upon the Earth his ſick foot, the firſt time that he riſeth up in the morning, and in that very place one muſt cut out a green turf of that Earth where the beaſt hath trod with that foot, and put this turf upon a tree, or upon a hedge lying open to the North wind; and if that wind come to blow upon the turf of Earth, the beaſt will be cured within three or four dayes very perfectly; but

but if one ſhould put that Turf towards the South-wind, or South-weſt (which in *Tholouze* is called *d' Autaunt*, here in *Montpellier le Marin*, and in *Italy le Scirrocco*) the diſtemper in the Oxe will increaſe. Theſe circumſtances will not ſeem ſuperſtitious unto you when you will have conſidered how that by the repoſe of the night the corrupt matter, or core, doth uſe to gather in a great quantity under the foot of the ſick Oxe, and comming in the morning to ſet his foot upon the ground, he preſſeth forth the Impoſtume, the matter whereof ſticks to that part of the Earth, and makes impreſſions upon it: Now this turf of Earth being put and expoſed in ſome proper place to receive the dry cold blaſts of the Northern winds, the dry cold blaſts of that wind do intermingle with the ſaid corrupted impoſtumated matter, which ſtretching its ſpirits all along the air, the ulcerated foot of the animal, which is the ſource of all, draws them unto it,

and

and with them it attracts also the cold dry atomes which cause the cure, the malady requiring no other help, than to be well dryed, and refreshed. But if one should expose this turf to a moist hottish wind, it would produce contrary effects.

Behold, my Lords, all my wheels formed, I confesse they are ill fil'd, and polished, but let us try whether being put together, and mounted they will make the Engine go; but if these wheeles being well joyned, and placed to draw the conclusion, or this unshaken carraque to a good port, you will, I presume, have the goodnesse to pardon the grosse, and rude expressions of my language, and passing by the words you will content your selves with the naked truth of things. Let us therefore apply that which hath been spoken to that which is practis'd when a wounded person is cured. Let us consider Master *Howel* wounded upon his hand, and a great inflammation hapened upon his hurt, his garter is taken covered with

the

the blood that iſſued from the wound, it is ſteeped in a baſon of water where Vitriol was diſſolved, one keeps the baſon in the day time in a cloſet, in the moderate heat of the Sun, and at night in the chimney corner, in ſuch ſort that the blood which is upon the garter way be alwaies in a good naturall temperament neither colder, nor hotter than in the degree required for a healthfull body, what ought then to reſult, (according to the doctrine that we endeavour to eſtabliſh,) from all this! In the firſt place the Sun, and the light will attract from a great extent and diſtance the ſpirits of the blood which are upon the garter, and the moderate heat of the hearth, which acts gently upon the compoſition (which comes to the ſame thing, as if one ſhould carry it dry in his pocket to make it feel the temperate heat of the body) I ſay the moderate heat of the hearth doth puſh out the ſaid atomes, as the water which gathers it ſelf round in the filtration or ſtrainings

drives

drives on that which mounts up, to make it go faster, and more eanly, making it also to dilate it self, and distill, and so march of themselves a good way in the air, to help thereby the attraction of the Sun and of the light.

Secondly, the spirit of the Vitriol, being incorporated with the blood, cannot chuse but make the same voyage together with the atomes of the blood. Thirdly, the wounded hand expires, and exhales in the mean time continually abundance of hot fiery spirits, which gush forth as a river out of the inflamed hurt; which cannot be but that the wound must consequently draw unto it the air which is next it. Fourthly, this air drawes unto it the other air which is next it, and that the next to it also, and so there is a kind of current of air drawn round about the wound. Fifthly, with this air come to incorporate at last the atomes, and spirits of the blood, and of the Vitriol which were diffused and shed

a

a good way off in the aire by the attractions of the light, and of the Sun. Besides, it may well be that from the beginning, the orbe and sphere of these atomes and spirits did extend it self in so great a distance without having need of the attractions of the aire, or of the light, to make them come thither. Sixthly, these atomes of blood, finding the proper source, and originall root whence they came, do stay, and stick there, and so reenter into their naturall beds, and primitive receptacles, whereas the other aire is but a passenger, and evaporates away as soon as it comes, even as when it is carried away through the funnell of the chimney, so soon as it is drawn into the chamber by the door. Seventhly, the atomes of the blood being joyned inseparably with the spirits of the Vitriol, both the one, and the other do joyntly imbibe together within all the corners, fibres, and orifices of the veines which lye open about the wound of the party hurt,

drives on that which mounts up, to make it go faſter, and more eaſily, making it alſo to dilate it ſelf, and diſtill, and ſo march of themſelves a good way in the air, to help thereby the attraction of the Sun and of the light.

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a

a good way off in the aire by the attractions of the light, and of the Sun. Besides, it may well be that from the beginning, the orbe and sphere of these atomes and spirits did extend it self in so great a distance without having need of the attractions of the aire, or of the light, to make them come thither. Sixthly, these atomes of blood, finding the proper source, and originall root whence they came, do stay, and stick there, and so reenter into their naturall beds, and primitive receptacles, whereas the other aire is but a passenger, and evaporates away as soon as it comes, even as when it is carried away through the funnell of the chimney, so soon as it is drawn into the chamber by the door. Seventhly, the atomes of the blood being joyned inseparably with the spirits of the Vitriol, both the one, and the other do joyntly imbibe together within all the corners, fibres, and orifices of the veines which lye open about the wound of the party hurt,

which hereby are comforted, and in fine imperceptibly cured.

Now to know wherefore such an effect and cure is so happily performed, we must examine the nature of Vitriol, which is composed of two parts, the one fixed, the other volatil. The fixed, which, is the salt, is sharp and biting, and caustique in some degree. The volatil is smooth, soft, balsamicall, and astringing, and 'tis for that reason that vitriol is made use of as a soveraign remedy in the medicine for the inflammations of the eyes, and when they are corroded, and scorched by some sharp and burning humor or defluxion. As also in injections where excoriations and scaldings use to happen, as also in the best plaisters to stanch the blood, and incarnate the hurt. But they who well know how to draw the sweet oyl of vitriol, which is the pure volatil part thereof, know also that in the whole closet of nature there is no balm like this oyl. For

this

this balm of ſweet oyl do h heale in a very ſhort time all kind of hurts which are not mortall, it cures, and conſolidates the broken veines of the breaſt, as far as the ulcers of the lungs, which is an incurable malady without this balm. Now 'tis the volatil part of the Vitriol, which is tranſported by the Sun (the great Diſtiller of nature) and which by that meanes doth dilate it ſelf in the aire, and that the wound, or part which received the leſion, drawes, and incorporates with the blood, together with its humours and ſpirits. And that being true, we cannot expect a greater effect of the volatil vitriol, but that it ſhould ſhut the veines, ſtanch the blood, and ſo in a ſhort compaſſe of time heal the wound.

The method, and primitive manner how to make uſe of this ſympathetical remedy, was to take onely ſome vitriol, and that of the common ſort, as it came from the Druggiſts, without any preparation or

addition at all, and to dissolve it in fountain water, or rather in rains water, in such a proportion, that putting therein a knife, or some polished iron, it should come out changed into the colour of copper: And into this water they did put a clout or rag of cloth embrued with the blood of the party hurt (the rag being first dry,) but if it was yet fresh, and moist with the reaking blood, there was no need but to powder it with the small powder of the same vitriol, in such sort, that the powder might incorporate it self, and imbibe the blood remaining yet humid, and keep both the one and the other in a temperate heat, and place, *viz.* the powder in ones pocket, and the water (which admits not of this comodity) in a chamber where the heat was temperate, and every time that one put new water of vitriol with fresh powder and new cloth, or other bloudied stuff the patient should feel new easement as if the wound had been then dresst with some soveraign medicament. And

for

for this reason they used to reiterate this manner of dressing both evening and morning.

But now, the most part of those who make use of this remedy of the Powder of Sympathy, do endeavour to have Vitriol of *Rome*, or of *Cyprus*, and calcine it white in the Sun: And besides, some use to adde the Gumme of *Tragagantha*, it being easie to adde unto things already invented.

Touching my self, I have seen such great and admirable effects of plaine Vitriol of eighteen pence the pound, as of that Powder which is used to be prepared now at a greater price: yet notwithstanding I do not blame the present practise; on the contrary I commend it, for it is founded upon reason.

First, it seems that the purest and best sort of Vitriol doth produce the best operation.

Secondly, it seems also that the moderate calcining thereof at the rayes of the Sun doth take away the superfluous humidity of the

Vitriol; and this calcination doth not touch any part but that which is good: as if one ſhould boyle broth ſo cleer that it comes to be gelly, which certainly would render it more nouriſhing.

Thirdly, it ſeems that the expoſing of the Vitriol to the Sun to receive calcination, renders its ſpirits more fitly diſpoſed to be tranſported through the aire by the Sunne when need requires.

For it ought not to be doubted but that ſome part of the ætherean fire of the Solar rayes doth incorporate with the Vitriol, as 'tis plainly diſcovered by calcining Antimony with a burning-glaſſe, for it much augments the weight of it almoſt half in half; and in this caſe the part of that luminous ſubſtance which remaines in the Vitriol, thus is made apt, and diſpoſed to be carryed in the aire by a ſemblable light, and Solar rayes. As we ſee that to make the tongue

of

of a pump draw the water the eaſier from the bottom of a well, one doth uſe to caſt a little water from above upon it. Now, the light carrying with it ſo eaſily the ſubſtance that is ſo connaturall to it, carries alſo with the more facility that which is incorporated with it.

Fourthly, theſe Solar rayes being embodied with the Vitriol, are in a poſture to communicate unto it a more excellent vertue than it hath of it ſelf, as we find that Antimony calcin'd in the Sun, becomes (whereas it was rank poyſon before) a moſt ſoveraign and balſamical medicament, and a moſt excellent ſtrengthner of nature.

Fifthly, the Gumme of Tragagantha, having a glutinous faculty, and being for the reſt very innocent, may contribute ſomething towards the conſolidation of the wound.

My Lords, I could adde unto what is ſpoken many moſt important conſiderations touching the form

and essence of Vitriol, whereof the substance is so noble, and the origen so admirable, that one may avouch with good reason, that it is one of the most excellent bodies which nature hath produced.

The *Chymists* do assure us that it is no other then a corporification of the universall spirit which animates and perfects all that hath existence in this sublunary World, which is drawn in that abundance by a Lover so appropriated, by meanes whereof I my self have in a short time, by exposing it onely unto the open aire, made an attraction of a celestiall Vitriol ten times more in weight, which was of a marvellous pureness and vertue; a priviledge which hath not been given but to it, and to pure virgin salt-peter.

But to anatomise as we ought the nature of this transcendent individuall, which nevertheless in some fashion may be said to be universall, and fundamentall to all bodies, it would require a Discourse far more ample then I have yet made. But

as

as I perceive I have already entertained you so long a time, it would prove a very great indiscretion to trench further upon your goodnesse, who have hitherto listned unto me with so much attention and patience, if I should go about to enter into any new matter, and embark my self for a further voyage. Wherefore remitting divers matters to some other time, when you shall please to order me, comming now again to the generall consideration of this Sympatheticall cure, I will put a period to this Discourse, after that I shall have told you two or three words, which will not be of small importance, for the confirmation of all which hath been alledged by me hitherunto.

I have deduced unto you the admirable causes of the operations, and strange effects of the Powder of Sympathy from their first root. These fundamentall causes are so enchaining one within the other, that it seems there can be no default, stop, or interruption, in their pro-

ceedings. But we ſhall be the better fortified in the belief of their vertue and efficacy, and how they come to produce the effects of ſo many fair cures, if we conſider that then when ſome change is practiſed in one of theſe cauſes, or in all of them together, we ſee and perceive immediately an effect altogether differing from the former. If I had never ſeen a Watch or Clock, I ſhould be juſtly ſurprized, and ſhould remaine aſtoniſhed to ſee a hand, or a needle, ſo regularly marke the journall hours, and motion of the Sun, upon the flat of a Quadrant; and that it ſhould turn, and make its round every four and twenty hours, there being nothing ſeen that ſhould puſh on the ſaid needle: But if I look on the other ſide, I ſee wheels, reſſorts, and counterpoiſes, which are in perpetuall motion; which having well and ſoberly conſidered, I preſently ſuſpect that thoſe wheels are the cauſe of the motion, and turnings of the ſaid Needle, although

though I cannot presently discerne or know how those moving wheeles do cause a motion in the needle of the quadrant, because of the plate that lyeth interposed betwixt them. Therefore I reason thus within my self; That every effect whatsoever must have of pure necessity some cause, and therefore that the body moved there ought necessarily to receive its motion from some other body which is contiguous to it. Now I see no other body which makes the Needle of the quadrant to move and turn, then the said wheels; therefore I must of force be perswaded to attribute the motion unto them. But afterwards, when I shall have stopped the motion of those wheeles, and taken away the Counterpoise, and observed that suddenly the Needle ceased to move, and that applying again the Counterpoise, and giving liberty for the wheel to turne, the Needle returnes to her ordinary train, or by making one wheele to go faster by putting my finger unto it,

or

or by adding more weight to the counterpoise, the needle doth hasten, and advance its motions proportionably. Then I grow to be convinced and entirely satisfied, and so I absolutely conclude that these wheels and counterpoises are the true cause of the motion of the needle.

In the same manner, if interrupting the action of any of those causes which I have established for the true foundation of the Sympathetical Powder, I alter, retard or hinder the cure of the wound; I may boldly conclude, that the foresaid causes are the legitimate, and genuine true cause of the cure, and that we need not amuse our selves to make indagations for any other.

Let us then examine our business by that bias. I have affirmed that the Light transporting the atomes of the Vitriol, and of the blood, and dilating them to a great extent in the aire, the wound or place hurt, doth attract them, and thereby is immediately solac'd and eased, and consequently

quently comes to be healed by the ſpirits of the Vitriol, which is of a Balſamicall virtue. But if you put the baſon, or Powder with the cloth embrued with blood, within an Armory, or into a corner of ſome cold room, or into a Cave, where the light never comes, nor freſh air, which makes the place corrupted, and to have ill ſmells, in that caſe the wound can receive no amendment, nor any good effect from the ſaid Powder. And it will fall out in the ſame manner, if having put the baſon, or Powder, in ſome By-corner, and that you cover it with ſome thick, ſtuffing, and ſpongy cloth, which may imbibe the atomes that uſe to come forth, and which retain the light and rayes which enter therein, whereby they are ſtopped, and quite loſt. Moreover, if you ſuffer the water of Vitriol to congeale into ice, wherein the cloth is dipped, the party hurt ſhall be ſenſible at the beginning of a very great cold in his wound; but when it is iced all over, he ſhall feel

neither

neither heat nor cold, in regard that congealed coth doth constipate the pores of the water, which nevertheleſſe doth not ceaſe to tranſpire, and ſend forth ſpirits. If one ſhould waſh the cloth, ſpotted with blood, in Vinegar, or Lye, (which by their penetrating acrimony tranſport all the ſpirits of the blood) before the Vitriol be applied, it will produce no effect; yet if it be waſhed but with pure ſimple water, it may nevertheleſſe do ſomething, for that water carries not away ſo much; but the effect will not be ſo great, as if the blood-ſpotted piece had not been waſhed at all, for then it is full of the ſpirits of the blood. The ſame cure is performed by applying the remedy to the blade of a ſword which hath wounded a perſon; if it come not to paſſe that the ſword be too much heated by the fire, for then it would make all the ſpirits of the blood to evaporate, and in that caſe the ſword would ſerve but a little to perform the cure. Now the reaſon why the ſword may

be

be dreſſed in order to the cure, is, becauſe the ſubtil ſpirits of blood do penetrate the ſubſtance of the blade, as far as the extent which the ſword made within the body of the wounded party, where they uſe to make their reſidence, there being nothing to chaſe them away, unleſſe it be the fire, as I ſaid before. For experiment whereof, hold it over a Chafing-diſh of moderate fire, and you ſhall diſcern on the ſide oppoſite to the fire a little humidity which reſembleth the ſpots that ones breath makes upon looking-glaſſes, or upon the burniſned blade of a ſword: If you look upon it athwart ſome glaſſe which makes the object ſeem bigger, you ſhall find that this ſoft dew of the ſpirits conſiſts in little bubbles, or blown bladders; and when once they are entirely evaporated, you ſhall diſcern no more upon the weapon, unleſſe it were thruſt a new into the body of a living perſon. Nor from the beginning ſhall you diſcover any ſuch thing, but preciſely upon that part of

the blade, which had entred the wound.

This ſubtill penetration of the ſpirits into the hard ſteel, may confirm the belief of the entrance of ſuch ſpirits into the skin of a woman big with child, as I remind to have propoſed unto you in my ſixth Principle remarkable in its own place. Now then, while the ſpirits lodge in the ſword, they may ſerve as great helps for the cure of the Patient, but when the fire hath driven them all away, the remedy applyed to the ſword will not availe any thing at all. Furthermore, if any violent heat accompanies theſe atomes, it inflames the wound; but common ſalt may remedy that, the humidity of water humectates the hurt, and the cold cauſeth a chilneſſe in the party wounded.

To confirm all theſe particulars, I could adde to thoſe I have already related many notable Examples more, but I fear I have already too much exerciſed your patience, therefore I will induſtriouſly preter-

mit

mit the mentioning of them at this time, but I offer to entertain in particular any of this Honourable Assembly therewith, if they have the curiosity to be informed of them.

I conclude then, Messieurs, by representing unto you that all this mystery is guided and governed all along by true naturall wayes and circumstances, although by the agency and resorts of very subtil spirits.

I am perswaded my Discourse hath convincingly shewed you, that in this Sympatheticall cure, there is no need to admit of an action distant from the Patient. I have traced unto you a real Communication twixt the one and the other, *viz.* of a Balsamicall substance, which corporally mingleth with the wound.

Now it is a poor kind of pusillanimity and faintnesse of heart, or rather a grosse Ignorance of the Understanding, to pretend any effects of Charme or Magick herein, or to confine all the actions of Nature to the grossenesse of our senses, when we have not sufficiently considered,

nor

nor examined the true cauſes and principles whereon tis fitting we ſhould ground our judgement : we need not have recourſe to a Dæmon or Angel in ſuch difficulties.

Nec Deus interſit, niſi dignus vindice nodus
Inciderit. ———

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